



Massachusetts Bay Transportation Authority 1983 Annual Report

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Cover photo: \$33 million Quincy Adams Station, completing
the nine-mile South Shore Red Line Extension
Project.

Photo by Nick Wheeler, 1983

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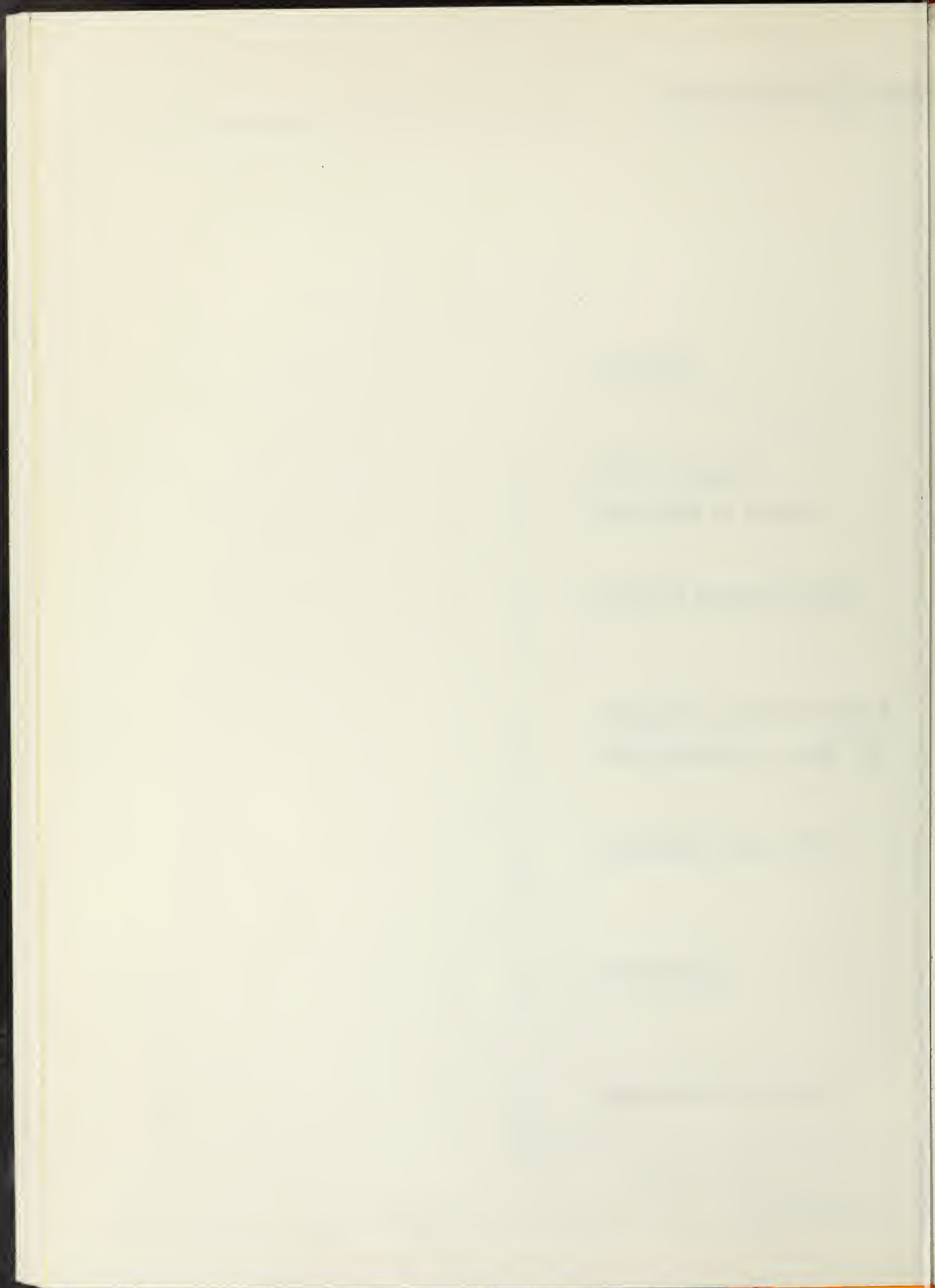
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Massachusetts Bay Transportation Authority 1983 Annual Report

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Departmental Reports

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Charts and Statistics

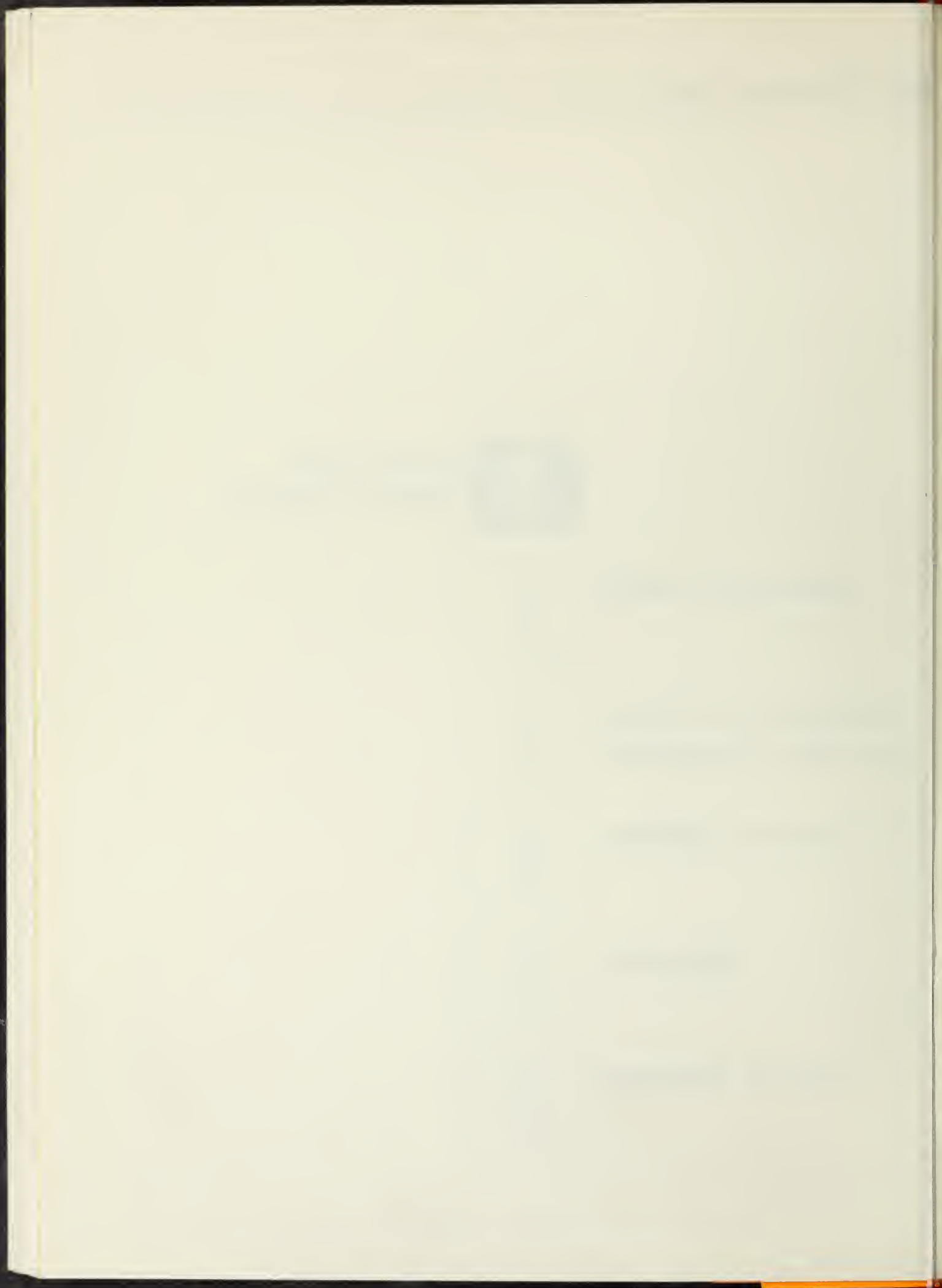
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MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

Ten Park Plaza, Boston, MA 02116

TO: His Excellency the Governor, The General Court
The Secretary of Transportation and the Advisory Board
to the Massachusetts Bay Transportation Authority

The Board of Directors of the Massachusetts Bay Transportation Authority, in accordance with the requirements of Section 5 (h) of Chapter 161A of the General Laws, hereby submits the Authority's Annual Report covering operations for the calendar year 1983. Included in the report is a description of the organization, recommendations for legislation and the comprehensive program for mass transportation prepared by the Executive Office of Transportation and Construction. Also included are departmental reports on accomplishments during 1983.

The net assessable cost of service, interest charged by the State Treasurer and Boston Metropolitan District expense must be considered by the 79 cities and towns in their settlement with the Commonwealth of their 1983 accounts in November, 1984. The accounts are as follows:

	Without Additional State Aid	With Additional State Aid of \$104,862,532.30
Net Assessable Cost of Service	\$194,788,069.36	\$89,925,537.06
Interest Charged by State Treasurer on Temporary Borrowings	9,883,837.94	9,883,837.94
Expense of Boston Metropolitan District	25,000.00	25,000.00
Net Cost to Communities	\$204,696,907.30	\$99,834,375.00*


*House bill No. 1 (Chapter 234 of the Acts of 1984), the state budget for fiscal year 1985 beginning July 1, 1984, provided additional contract assistance in the amount of \$104.9 million to allow cities and towns to be capped at an assessment of \$99.8 million.

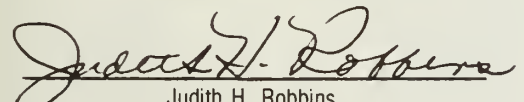
The following statement shows the Authority's comparative net cost of service including all elements of cost for calendar years 1983 and 1982.

The balance sheet and statement of long-term debt of the Massachusetts Bay Transportation Authority as of December 31, 1983, and the related statements of revenue and cost of service, reimbursed cost of service, and source of disposition of funds for the fiscal year ended December 31, 1983, together with notes relating to these financial statements, are appended to this report.

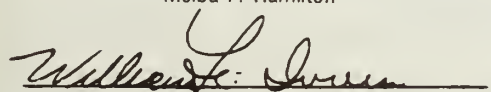
Respectfully submitted,

Board of Directors
Massachusetts Bay Transportation Authority

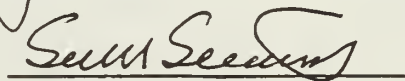

Frederick P. Salvucci
Chairman

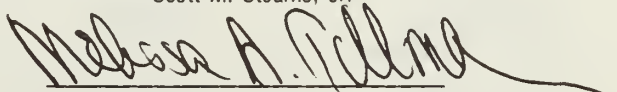

Judith H. Robbins


Melba F. Hamilton


William F. Irvin


James E. Smith

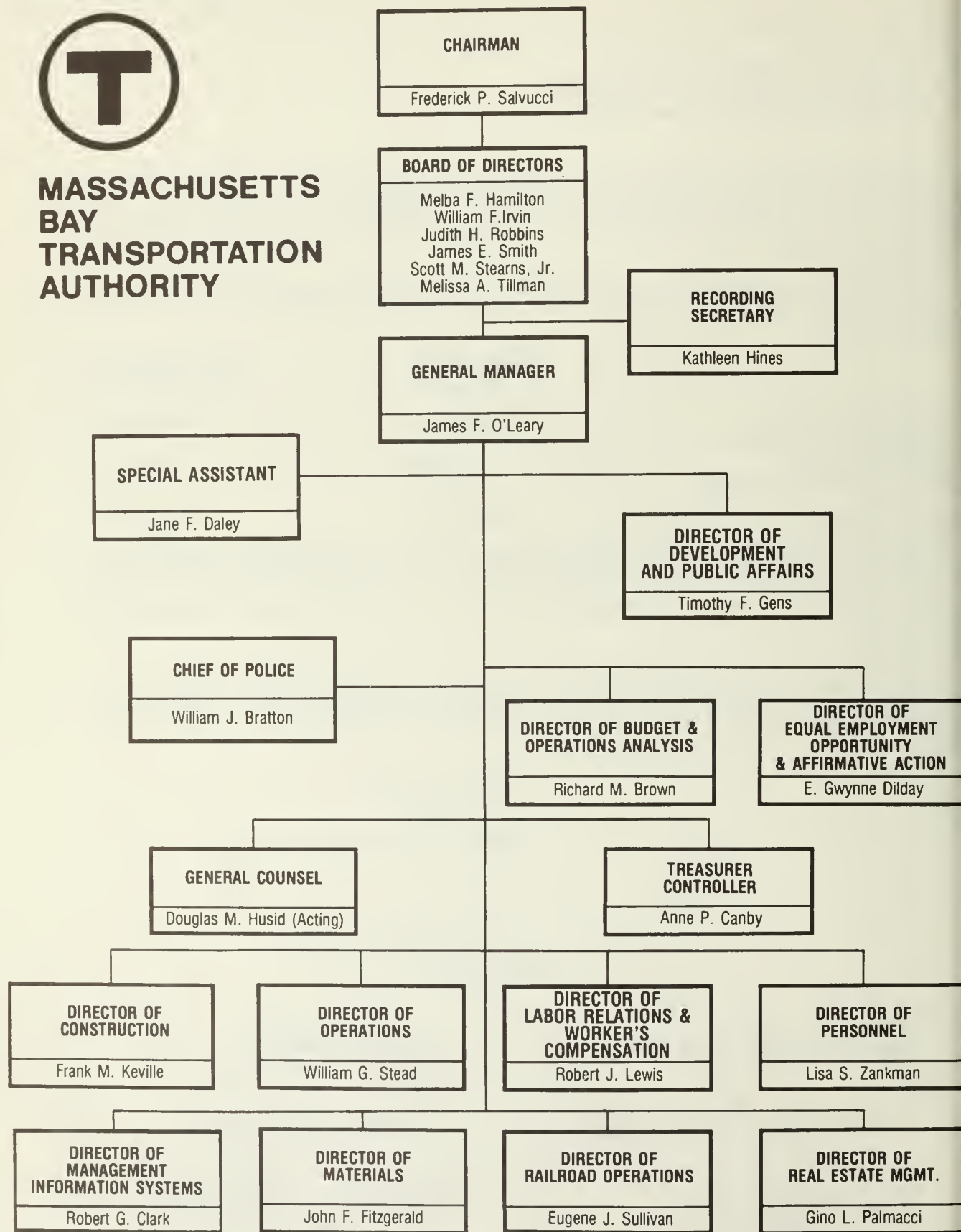

Scott M. Stearns, Jr.


Melissa A. Tillman

ORGANIZATION CHART



MASSACHUSETTS BAY TRANSPORTATION AUTHORITY



**Report of the
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BOARD OF DIRECTORS 1984



Frederick P. Salvucci - Chairman of Board - Secretary of Transportation.



William F. Irvin - International Staff Representative, United Steel Workers of America, Vice-President of Mass. AFL-CIO, actively involved in organized labor since 1950. Resides in Melrose.



Scott M. Stearns, Jr. - Former Director, National Association of Realtors; Former assessor of Town of Longmeadow, where he presently lives.



James E. Smith - Lynn Attorney, and graduate of Harvard University's John F. Kennedy School of Government. Former Executive Director of MBTA's Advisory Board. Former member of Mass. General Court.

Judith H. Robbins - President of City Council, Attleboro, and professional public management consultant.



Melba F. Hamilton - Lifelong community advocate in South Boston.



Melissa A. Tillman - Former educator and expert in financial planning. She received an M.A.T. from Harvard Graduate School, and presently lives in Boston.



MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

James F. O'Leary
General Manager
Transportation Building
Ten Park Plaza
Boston, Massachusetts 02116

Frederick P. Salvucci, Chairman
and Members of the
Massachusetts Bay Transportation Authority
Board of Directors

Dear Mr. Chairman and Members of the Board of Directors:

Nineteen hundred eighty-three was a year of unprecedented growth, outreach and innovation at the Massachusetts Bay Transportation Authority. The Authority served more than 568,900 riders daily, a 9.1 percent increase over 1982, and operated 38.7 million revenue miles, a 4.6 percent growth.

A vast program of construction, modernization, rehabilitation, service improvement and expansion throughout our service network — four rapid transit lines, a 250-mile Commuter Rail system, 153 bus routes, four trackless trolley routes, and a high speed trolley line — proceeded both on schedule and under budget.

Quincy Adams Station opened for revenue service in September, marking completion of the five-station, nine-mile South Shore Red Line Extension. The \$574 million 3.2 mile Red Line Northwest Extension Project progressed with the opening of the Church Street entrance at the new Harvard Station. Boston's largest construction project ever, the \$747 million Southwest Corridor Orange Line Relocation Project, advanced into heavy construction. And work began on the \$100 million renovation of South Station into a multimodal transportation facility.

The \$35 million rehabilitation of the Everett maintenance facilities and construction of the \$10 million Reservoir maintenance facility moved into the final stages. Approximately \$44.5 million was spent on track, tunnel, station, signal and communications equipment improvements. Altogether, ongoing MBTA construction projects continued to contribute significantly to the health of the state's economy.

Train and trolley availability exceeded goals for peak rush-hours during the last five months of the year. To assure further progress in vehicle dependability, in May the Authority signed an \$11.8 million contract for rehabilitation of 44 Red Line Cars. Six more cars were included in the project in December 1983. Bus reliability improved by 23 percent over 1982.

Our Commuter Rail system saw a record ridership of more than 11.3 million and record revenues of \$16.8 million. A record-high 98 percent on-time performance should make regular riders of those new passengers.

Expanded outreach and sensitivity to the riding public were high priorities in 1983. Employees of the MBTA made the system more responsive, providing cleaner, faster, safer, and more reliable service. We expanded The Ride program, added new bus routes and altered existing ones to meet changing needs.

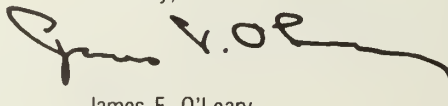
Police-community relations improved and the Authority's police force grew with the addition of 38 new officers. Police Training programs were expanded and new stations were equipped with talkback radios and closed-circuit televisions for greater rider security.

Innovative efforts by MBTA management resulted in important gains for the Authority. Computerized monitoring systems now provide instantaneous information about our transit needs, enabling the Authority to boost its efficiency. New financing techniques saved the Authority money.

We made outstanding progress in holding down costs through greater worker productivity. The Management Rights Legislation, passed in late 1980 and upheld by the courts a year later, permitted the Authority to turn to private industry for the cleaning of vehicles and stations and for the provision of janitorial and watchmen's services. This allowed transit employees to provide more and improved service, while saving \$64.6 million since 1981.

Governor Michael S. Dukakis's commitment to improving our mass transportation system has been a significant factor in our successes to date and represents an important resource and inspiration as we prepare for the future. We look forward to working together with his administration and with you in the years ahead to make our transit system second to none.

Sincerely,



James F. O'Leary
General Manager

JAMES F. O'LEARY

GENERAL MANAGER OF THE MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

James F. O'Leary was appointed General Manager of the Massachusetts Bay Transportation Authority (MBTA) in 1981. He was reappointed by a unanimous vote of the Board of Directors on March 28, 1984.

Mr. O'Leary, 35, was named General Manager of the MBTA after serving two years as Undersecretary and General Counsel of the Executive Office of Transportation and Construction. He came to EOTC after serving as Legal Counsel to U.S. Representative John Joseph Moakley.

A graduate of the University of Massachusetts at Boston, Mr. O'Leary earned his Juris Doctor degree from Suffolk University in 1973. That same year he was admitted to the Massachusetts Supreme Judicial Court. He has served as treasurer of the Board of Governors of the UMASS Foundation and a board member of Southwest Boston Community Services.

O'Leary is a two-time winner of the Federal Urban Mass Transportation Administration's Outstanding Public Service Award. In 1982 he received the Univ. of Massachusetts Outstanding Alumni Award and was named one of 10 Outstanding Young Leaders by the Boston Junior Chamber of Commerce.



OFFICE OF BUDGET AND OPERATIONS ANALYSIS

Budget and Operations Analysis ensured that 1983's programs were cost-effective, affordable, and consistent with priorities established by the MBTA Board of Directors.

During the year, **Budget and Operations Analysis** helped departments establish formal goals, standards, and objectives for management and service performance. It assisted departments with planning, management, and organizational problems and

conducted special analyses of operations and service costs.

As a result of these monitoring and control efforts, MBTA spending at the end of calendar year 1983 was \$3 million below Advisory Board authorization levels, nearly one percent of the Authority's total annual budget. This savings was the result of careful scrutiny of capital projects, skillful use of bond money and new techniques for financing short-term debts.



COMMUNICATIONS DIRECTORATE

For **Communications** 1983 was a year of expanded outreach to MBTA constituencies. Heightened public interest in new and growing transportation services and the need for MBTA construction-related information called for greater contact with riders than ever.

Regular programs, such as Special Needs Registration and Senior Citizen Visits, reached out to locations in sixteen cities and towns in the MBTA service area. Increased special transportation via "The Ride" received added attention, and access to other MBTA services, such as the Pass Program and complaints investigation, was expanded through the addition of evening and weekend telephone message capability.

The Pass Program, which planned for its 10th Anniversary in 1984, saw a rise in sales to nearly a million passes, an increase in ridership of approximately 9 percent over 1982, representing \$27.4 million. Business discounts for Passholders increased, and the MBTA won its sixth consecutive annual auto insurance discount for regular transit users from the Insurance Commissioner.

The Authority's public service announcements were more numerous and varied during 1983. A systematic approach to airing non-profit and government agency messages throughout the MBTA system took form; increased announcements on the station public address system began; and the Authority produced its first television PSA to help foster public awareness of Harvard Station

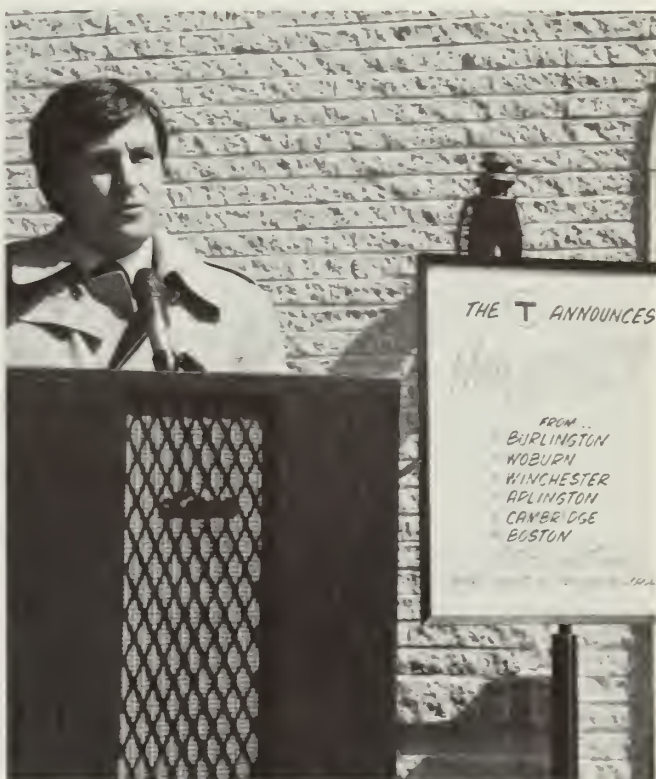
changes.

The promotion of new routes and schedules benefitted from innovative marketing techniques employed in 1983. Expanded bus routes between Marshfield and Braintree, to the Burlington Mall and to Chinatown were announced with rear buscards, newspaper ads and "free ride" vouchers.

In response to changing shopping patterns at Downtown Crossing, the MBTA inaugurated an extended schedule to serve businesses and their customers better, announced by a communications effort that included a press conference in the shopping district and posters in downtown stores.

Communications spent considerable energy disseminating public information and orchestrating appropriate inaugural ceremonies for the opening of the new Harvard Station entrance at Church Street and the Quincy Adams Station on the South Shore.

Five million schedule cards were produced and distributed by the 456 outlets of the MBTA Travelers Aid Program. The map program sold 75,000 MBTA system maps and 50,000 wallet maps in 1983. The design, production and distribution of 1.4 million promotional pieces — information flyers, posters and carcards — helped the public keep pace with system growth. Over 354,000 information calls and 96,000 Pass Program inquiries were answered, and 6500 rider complaints and commendations were handled.



EQUAL EMPLOYMENT OPPORTUNITY / AFFIRMATIVE ACTION

Equal Employment/Affirmative Action (EEO/AA) worked throughout the year to establish MBTA goals for employment, professional services, and contracts; to increase the Authority's commitment to affirmative action; and to investigate discrimination complaints.

EEO/AA significantly reduced the number of discrimination cases pending before the Equal Employment Opportunity Commission, the Massachusetts Commission Against Discrimination, and the Department of Transportation. Thirty percent of cases pending since 1980 were resolved by the close of 1983.

Review and approval of the Authority's three civil rights submissions (a revised 5-year Affirmative Action Plan, an approved Minority Business Enterprise Plan and Title VI Assessment for Capital Operating Assistance Report) allowed the Authority to be re-certified as meeting all applicable civil rights requirements.

Design work began for a Personnel Management Information System (PMIS) to address **EEO/AA** needs. PMIS will monitor

Authority employment practices regarding race, sex, age, handicap, Vietnam Era veteran status, disciplinary trends, hiring and promotional opportunities. PMIS is expected to be fully operational during FY 1984.

\$15.7 million in construction funds went to disadvantaged business enterprises (DBEs), representing 16.1 percent of the total construction budget and exceeding the ten percent goal set for DBEs in 1983. In every case, the MBTA met or surpassed manpower utilization goals (percentages of minority building trades employees set by a state formula that reflects the demographics of the construction site). On the Southwest Corridor Project alone, the manpower utilization figure was 30 percent minority.

Since March 1981, the MBTA has had a supportive service contract with Contractors Association of Boston (CAB). CAB assists disadvantaged/women's business enterprises and monitors MBTA construction project compliance with minority and women employee utilization levels.



OPERATIONS DIRECTORATE

Transportation

Transportation took a number of actions in 1983 designed to expand service, improve MBTA safety and efficiency, reduce construction-related passenger inconvenience and meet special transportation needs within the MBTA service area.

On September 6 service to the new Quincy Adams Station and the newly-renovated Harvard Station on the Red Line began. In the months immediately following, more than 2,000 riders a day were using the Quincy Adams station.

Ridership and revenues continued to grow throughout the system. Despite a fare rollback in 1982 (from \$.75 to \$.60), revenues increased \$1.4 million in 1983 to \$94.8 million, representing a 4 - 5 percent gain in ridership.

Peak Hour service increased on more than a dozen bus routes. Evening and Sunday service improved on two dozen routes and the Green Line, and one-half dozen other routes were restored. Route 3 buses commenced service between Chinatown and South Boston; Route 350 buses were diverted to stop at the Mall in Burlington; Route 701 was replaced by two new routes, 352 to Burlington and 353 to Woburn; Route 411 was expanded and extended to Malden; midday and Saturday buses were added to Route 302, and the five routes with stops at Downtown Crossing were expanded to include Sunday service. In addition, Route 238 was re-routed to stop at the new Quincy Adams station.

Transportation provided supplemental bus service during Blue Line track replacement, track refurbishment on the Commonwealth Avenue branch of the Green Line and Granite Arch Bridge repairs (which closed the Arborway branch of the Green Line while the bridge was demolished and water and sewer lines were relocated for the Southwest Corridor Project).

During 1983 "The Ride" Program for persons with special needs expanded significantly. The communities of Arlington, Belmont, Watertown, Newton, Malden, Chelsea, Somerville, Winthrop, Everett, and six neighborhoods of Boston were added to the program, bringing the total number served to 12. The number of individual passenger trips increased by nearly 20 percent to 96,000 trips. 15 new vans were purchased using Section 3 UMTA funds, bringing the van total to 45. In addition to expanding "The Ride," the Office of Special Needs continued to monitor accessibility in the construction and modernization of stations, and to participate in planning for increased wheelchair bus service. 84 buses are now equipped for special needs passengers.

The Authority offered free service from 10:00 p.m. until an extended closing hour of 3:00 a.m. for Boston's "First Night Festival", and extra service for the annual July 4th Esplanade concert.

The office of the Director of Operations now generates a weekly Performance Indicators Report that includes throughput performance, vehicle trips not run, vehicle availability, mean distance between failures for diesel buses, miles since previous scheduled service and inspection for Red Line vehicles, disabled vehicles by line, "The Ride" operating statistics, an electronic controllers and pass readers service report, and vehicle cleanliness by bus garage.

"Throughput" is the term used to measure, by half-hour intervals during the entire 20-hour service day, the actual number of trains going by a specific point on the line and compares it with the scheduled number of trains. This gives MBTA management an instantaneous picture, via computer terminals, of exactly how the service is doing. On the Red Line, throughput performance ranged between a high of 94.0 percent and a low of 86.1 percent (8/12/83 to 12/30/83). Green Line throughput during the same period ranged between 101.3 percent and 89.3 percent. Orange Line and Blue Line performance monitoring commenced in December.

Together with **Safety and Training**, **Police**, and **Personnel** Departments, **Transportation** developed a Starters and Inspectors Training Program. Designed for street supervisors, it emphasizes both leadership (how to transport the public courteously and safely, proper direction of employees, and heightened knowledge of rolling stock repair and switch usage) and police security (a 10-day intensive course in the use of defensive force, police arrest and courtroom procedure, report writing, CPR and first aid).

Transportation also developed an automated manpower control log to pinpoint manpower available to meet specific timetable needs. This weekly published report enables **Transportation** to adjust for fluctuations caused by promotions, disqualifications and terminations.

OPERATIONS DIRECTORATE (cont.)

Rail Equipment Maintenance

Rail Equipment concentrated its energies in 1983 on maintaining vehicles for current service needs, improving maintenance facilities, and preparing for expanded Red Line service to Alewife and the South Shore.

Orange and Blue Line vehicles remained some of the system's most reliable cars. Combining new cars with effective maintenance enabled both lines to exceed 100 percent of vehicle availability requirements every operating day of 1983.

Vehicle availability for Green Line Light Rail Vehicles (LRVs) during peak rush-hours exceeded goals for the last five months of 1983. This was due to rehabilitation and modification programs at the Riverside Carhouse and an intensive effort by the Everett Main Repair Shop to provide modified axles and wheels.

Vehicle Availability (8/12/83 to 12/30/83) for rail equipment exceeded 100 percent for rush-hour service on each line:

Red Line	101%
Orange Line	122
Blue Line	125
Green Line	
(LRVs)	104
(PCCs)	114

Reconstruction of the Everett maintenance facilities moved into the final stages with completion of Automotive Equipment Shop renovations. The \$35 million rehabilitation of the 50-year-old

buildings is scheduled for completion by the end of 1984, when the Main Repair Shop is finished. The refurbished buildings and modernized equipment comprise the centerpiece of the Comprehensive Preventive Maintenance Program (CPMP) which, upon final approval, will involve every carhouse used by **Rail Equipment**.

Automotive Equipment Maintenance

During 1983 **Automotive Equipment** improved and increased its maintenance, repair and inspection of the Authority's 1,050 bus fleet and over 400 non-revenue vehicles. Bus availability for rush hour service (8/12/83 to 12/30/83) was 111 percent.

Vehicle performance rose from 1763 mean miles between breakdowns in 1982 to 2489 miles. Mean miles between transmission failures improved from 92,000 miles to 119,717. In addition, MBTA buses drove 23,950,516 revenue miles in 1983, an increase of 8.7 percent over 1982, and the number of disabled buses decreased 23 percent.

39 percent fewer transmissions were required by buses and 34 percent fewer engines were installed in 1983 than during the previous year, largely due to preventive maintenance. Mean miles between engine failures in 1983 increased 65 percent from 151,186 to 249,485.

At the same time, mean miles between inspections for 1983 dropped 31 percent from 1982's average to 5,020. And the total number of inspections was 6,914, an increase of 58 percent over 1982's 4,386.



OPERATIONS DIRECTORATE (cont.)

Engineering and Maintenance

Engineering and Maintenance took significant steps to improve the Authority's physical plant, to increase the safety of operators and passengers, and to boost management efficiency and productivity.

Physical Plant Rebuilding and Upgrading

On the Commonwealth Avenue Branch of the Green Line a one-mile section of double track was completely rebuilt with new platforms, shelters, barriers, overhead wire support poles and rehabilitated overhead power equipment. A four-mile stretch of double track on the Blue Line between Airport Station and Wonderland required renewed electrification equipment and replacement of overhead wire system components. Switch mechanisms and signals at the Orient Heights interlocking area, where trains access the main line from the storage yard, were also completely rehabilitated.

Track, power and signal personnel completed Phase I of the Green Line portion of the Southwest Corridor Project (SWCP). This required rerouting the Arborway Branch from Arborway Yard to South Street to allow SWCP construction in the Forest Hills area.

The retrofitting of No. 5 cars with cab signal equipment was finished as part of the Red Line's Automatic Train Control signal system.

Progress also continued on long-term engineering projects. Over the Labor Day weekend, the Red Line was cut over and connected to the new Northwest Extension track at Harvard Square Station. And the Traction Power Improvements Project, converting the MBTA from a 25 Hz to a 60 Hz system, continued on schedule with energization of the new Shawmut and Kendall substations. This project is now 60 percent complete, with system-wide conversion expected in early 1985.

Engineering and Maintenance also initiated several long-term rehabilitation efforts during the year. A Five-year Cable Improvements Program to replace old, worn or damaged power cables system-wide was begun. The Authority started a major Subway Pump Room Rehabilitation program with replacement of pumps at four critical locations. This program will rejuvenate deteriorating pump rooms throughout the system and replace unreliable equipment. Rehabilitation of the 10 most critical pump rooms was approximately 80 percent complete by the end of 1983.

Several projects to improve operating flexibility were completed by **Engineering and Maintenance** in 1983. New crossovers for the Red Line (Park Street Station) and the Green Line (Coolidge Corner on Beacon Street, Blandford and Washington Streets on Commonwealth Avenue), and resequenced circuits for the Orange Line (Oak Grove Station) now allow greater maneuverability of trains in the event of a service disruption or major delay.

And the hand-operated switches at the Brattle Loop outside Government Center Station on the Green Line were automated, improving speed of service.

Communications

Communications and its contribution to safe transit operations were high priorities in 1983. Some 285 bus radios were purchased and installed, more than doubling the number of buses with communication capability. On the South Shore Branch of the Red Line, a UHF Radio Conversion Program replaced old equipment, thus standardizing system-wide radios. And train operator hot-line telephones installed at all Orange Line stations now give operators access to passengers in the event of trouble.

Management / Productivity

A Performance Monitoring System established 18 maintenance goal programs and follows them weekly, monthly, quarterly and annually to flag substandard performance. And a computerized defect processing system was established in coordination with the MIS Directorate.

In January, a new Absenteeism Control Policy clearly defined for all employees their attendance responsibilities and disciplinary steps for abusive absenteeism. And Power Emergency Crew work hours were shifted to provide better-coordinated and more flexible system coverage.

A consulting firm was hired to study the reliability and maintainability of electronic fare collection equipment. The contractor will identify design modifications and additional or revised maintenance requirements.

A new \$230,000 torsion beam tamping machine was purchased and pressed into service on the Red Line between Columbia and Braintree. This preventive maintenance tool permits higher operating speeds and smoother, safer rides while reducing track defects.

RAILROAD OPERATIONS

The MBTA Commuter Rail system carried more people to and from Boston more dependably than ever before. Ridership during 1983 totalled more than 11.3 million, a 13 percent increase over 1982 and a 34 percent increase since 1979. Revenues rose by almost 17 percent, a 40 percent increase over the previous two years. Commuter Rail on-time performance has climbed steadily from 92 percent in 1981 to nearly 98 percent in 1983.

In order to continue these positive trends, **Construction** carried out a \$12 million program to improve track, signals, and stations. 16 miles of new welded rail were installed along the outbound side of the Eastern Line's Gloucester/Rockport branch from Beverly Junction to Rockport. On the Franklin Line, crews replaced portions of the railbed between Readville and Norwood.

A new traffic control system was installed on the New Hampshire/Maine Line between North Billerica and Lowell, and signal equipment was rehabilitated on the Eastern Line to Ipswich.

To accommodate the growth in passenger traffic, several stations saw work in 1983. In Mansfield, the parking lot was enlarged, and in Lowell, work was begun on a major new transportation terminal. Construction of the first new Commuter Rail station since 1980 was begun at Mishawum in Woburn, and full-scale renovations began at the station in Swampscott. All of these improvements were designed to enhance the safety, reliability and comfort of traveling by Commuter Rail.

In 1983 the Commonwealth decided to restore commuter service to the Needham Branch; **Railroad Operations** began feasibility studies regarding Commuter Rail service to southeastern Massachusetts, and a \$10.7 million rehabilitation of the Attleboro to Hyannis line got underway. Conrail began a \$2.7 million rehabilitation of the Framingham Terminal area.

For the first time since 1976, **Railroad Operations** performed extensive passenger research. The results of a 42-question survey give Commuter Rail current demographic information about its ridership. This information is being used to improve passenger communication and Commuter Rail services.



CONSTRUCTION DIRECTORATE

1983 witnessed significant **Construction** activity and accomplishment. Highlighted by the opening of Quincy Adams Station and a portion of the new Harvard Station on the Red Line, the year also saw substantial progress on the Southwest Corridor Project (SWCP). In addition, **Construction** advanced its system-wide improvement program — including station modernization; tunnel, power and track rehabilitation; Commuter Rail upgrading, and maintenance facility improvements and reconstruction.

During 1983, **Construction** obtained approximately \$230 million in capital grants from the U.S. Urban Mass Transportation Administration (UMTA) and, together with the Executive Office of Transportation and Construction, a two-year \$206.8 million bond authorization from the Massachusetts Legislature.

Construction expended more than \$316 million during 1983, including 31 construction contracts valued at \$121.7 million. As a result, the MBTA remained the largest single contributor to the Massachusetts construction industry, providing a major boost to the Commonwealth's economy. Since 1964 the MBTA has obligated over \$3.5 billion towards capital improvements projects, providing thousands of construction and related jobs, and creating permanent jobs as new stations stimulate urban revitalization.

1983 Construction Highlights

During 1983, **Construction** passed several milestones in the MBTA's effort to improve service through capital improvements.

Quincy Adams Station

The new \$33 million Quincy Adams Station, final link in the South

Shore Red Line Extension Project, opened for revenue service in September. Situated between Quincy Center and Braintree, the station features a 2,000-car parking garage with direct-access ramps to and from the Route 128-Route 3-Southeast Expressway interchange. One of the largest facilities in the MBTA system, Quincy Adams marks completion of the five-station, nine-mile South Shore Red Line Extension, which is providing Boston's southern and southeastern suburbs with a better mass transit alternative to automobile travel.

Red Line Northwest

The 3.2-mile Red Line Northwest rapid transit extension project progressed with the opening of the Church Street entrance at the new Harvard Station. This permits uninterrupted train service during completion of the Harvard, Porter, Davis and Alewife stations.

The Northwest Extension was approximately 81 percent complete by the end of the year and is scheduled to begin full revenue service in the spring of 1985. It is expected to attract over 22,000 new riders to the Red Line and link downtown Boston with Cambridge's many educational, cultural and business institutions.

The original project estimate of \$619 million has been reduced to \$574 million. The construction has generated over 2,000 construction-site and 4,000 related jobs. Over \$68 million in materials purchases, half of which are produced locally, has stimulated the area economy, and long-term employment benefits are expected through development of Cambridge's Alewife area.

CONSTRUCTION DIRECTORATE (cont.)

partly as a result of the forthcoming Red Line service.

Southwest Corridor Project

The \$747 million Southwest Corridor Project, the largest single construction project in Boston history, moved into heavy construction with nine contracts totalling \$65 million awarded. By the end of the year, 90 percent of the design work and approximately 56 percent of the construction had been completed.

A cooperative effort of the MBTA, UMTA, the Commonwealth of Massachusetts and the City of Boston, SWCP is a rapid transit/rail development project encompassing one-quarter of the city's population and linking downtown Boston with seven of its neighborhoods.

The 4.7-mile project will relocate the Orange Line from the 75-year-old Washington Street elevated structure through Roxbury into a depressed rail right-of-way from Boston's South End/Back Bay to Forest Hills. Commuter Rail and Amtrak lines will be upgraded in this right-of-way, and 21 bridges and nine new rapid transit stations, three of which will also serve as railroad stations, are being constructed. SWCP also includes street improvements and creation of an 85-acre parkland that will stretch from the South End/Back Bay to Forest Hills and link Boston's major parks (Arnold Arboretum and Franklin Park).

SWCP consists of 44 construction contracts that will generate more than 18,000 jobs during a seven-year construction period. Minority Business Enterprises goals for these contracts range from 10 to 35 percent. A potential 12,000 permanent new jobs are expected from future development along the corridor, as well as a

\$7.3 million increase in tax revenue for Boston.

SWCP is scheduled to open in late 1986 or early 1987. At that time, ridership on the Orange Line is anticipated to be 60,000 passengers per day. An additional 10,000 passengers are expected to use the improved Commuter Rail and Amtrak lines. The original cost of \$792 million has been reduced to \$747 million, due to tightly-drawn specifications and construction bids well below estimates.

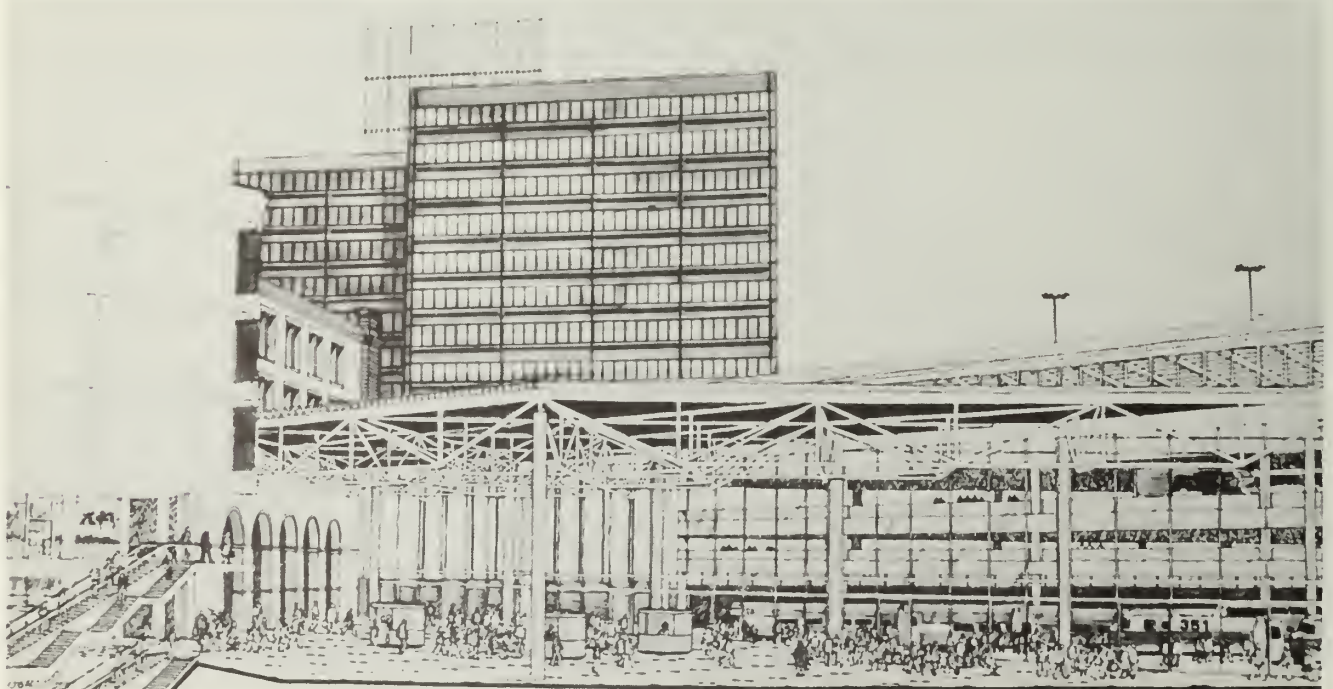
South Station Transportation Center Project

Preliminary work was completed in 1983 for the \$100 million South Station Project, considered the nation's most complete, inter-modal transportation facility serving rapid transit, Commuter Rail, Amtrak, local and intercity buses and automobile passengers. Phase I includes rehabilitation of the historic terminal building and concourse; construction of a new wing and platforms accessible to the handicapped, and track improvements. Future phases will include a new bus terminal, a parking facility and air rights development of a hotel and office building.

South Station, scheduled to break ground in 1984, is a joint effort of the MBTA, UMTA, the Federal Railroad Administration and the Boston Redevelopment Authority.

Work begun in 1983 includes the relocation of a Massachusetts Turnpike ramp to provide future direct highway access to South Station; construction of a temporary train maintenance facility, and construction of the Wye Connector Bridge across the Fort Point Channel to improve MBTA Commuter Rail and Conrail freight traffic into South Station and the adjacent area.

South Station Transportation Center



CONSTRUCTION DIRECTORATE (cont.)

System-Wide Improvements Program

A major System-wide Improvements Program to modernize tracks, tunnels, stations, and signal and communications equipment progressed substantially. 17 contracts, totalling approximately \$44.5 million, were awarded for these improvements during the year. In all, the MBTA has obligated more than \$2 billion towards this program.

It includes \$6.2 million for reconstruction of Blue Line tracks between Airport and Wonderland stations, and entrance tracks to the Orient Heights yards; \$2.5 million for rehabilitation of the Blue Line's Suffolk Downs Station and modernization of the Red Line's Ashmont and Savin Hill/Fields Corner stations; \$1.3 million for rehabilitation of Green Line tunnels between North Station and Park Street, and Blue Line tunnels between State and Bowdoin.

Further amounts of \$1.1 million for rehabilitation of the Bartlett Street Bus Garage; \$502,000 for the removal and installation of new bus hoists at the Sales and Albany Street Garages; \$1.6 million for rehabilitation of the Lynn Bus Garage; \$3.1 million for ventilation shaft and emergency exit improvements at Maverick,

Southwest Corridor Project



\$5 million for Long Wharf/Aquarium, and \$949,010 for Gillette Park in South Boston were obligated.

Construction also played an important role in upgrading security, launching a pilot program for closed-circuit television and police talkback radios at the Quincy Adams, Harvard, and Fields Corner stations. A \$3.6 million contract was awarded for installation of underground radio communications for the MBTA Police.

In addition, major MBTA and privately-owned Commuter Rail lines were upgraded by **Construction** [see **Railroad Operations**].

CONSTRUCTION DIRECTORATE (cont.)



Northwest Extension of the Red Line.

Looking Toward the Future

ORANGE LINE REPLACEMENT TRANSIT IMPROVEMENT STUDY — A study of transportation alternatives for the Washington Street corridor (after Orange Line relocation to the Southwest Corridor) was begun.

NORTH SHORE — Design work and environmental studies were carried out for modernization of the Revere Beach and Wonderland Blue Line stations, as well as for a joint MBTA-City of Lynn parking garage and relocation of the Salem Commuter Rail Station.

GREEN LINE NORTHWEST — Design work was authorized for relocation of the Green Line at North Station, for North Station improvements and for new Commuter Rail tracks. Joint planning with the City of Cambridge for relocation of Lechmere Station and for service improvements beyond Lechmere continued.

PARK-AND-RIDE — Preliminary engineering began at twelve sites to boost transit ridership by improving and expanding MBTA Park-and-Ride facilities over a five-year period.



Suffolk Downs Station.

MBTA CONSTRUCTION CONTRACTS AWARDED — 1983 (cont.)

Award Date	Contract Description	Firm Name	Award Amount
3/1/83	Gloucester Branch Repairs to Gloucester Drawbridge, Essex County, Gloucester, MA 099-107	J.M. Cashman, Inc.	\$ 1,193,920.00
3/1/83	South Boston Lobby and Turnaround Facility, Boston, MA 100-115	Petrucelli Corp.	194,000.00
3/10/83	Track Improvements Blue Line, Airport to Wonderland, Boston & Revere, MA 095-103	J.F. White Contracting Co.	6,171,895.00
5/6/83	Blue Line Subway Ventilation Improvements, Shaft B-5, Maverick, Boston, MA 057-106	Perini Corp.	3,198,090.00
5/6/83	Southwest Corridor Project, Section III, New Boylston Street Station, Boston, MA 097-307	Kiewit Eastern Co.	2,745,000.00
5/13/83	Subway Tunnel Ventilation Shaft R-12, Gillette Park, South Boston, MA 091-167	Eastern Seaboard Engineering Corp.	949,010.00
5/16/83	Installation of UHF Radio and AVI Equipment - Red Line Cars, South Boston, MA 091-167	Urban Electrical Co., Inc.	421,000.00
5/16/83	Southwest Corridor Project, Section I, Massachusetts Avenue Station, Boston, MA 097-117	J.F. White Contracting Co.	3,901,900.00
5/17/83	Signals and Communications, Columbia Sta. to Harvard Sta., Boston and Camb., MA 091-166	General Railway Signal Co.	7,025,399.00
5/27/83	Furnish and Install Supervisory Control and Data Acquisition Equipment, Metropolitan Boston Area, MA 066-113(R1)	Camco/Iejas Controls, Inc.	1,453,772.00
5/31/83	Porter Square Station Metal Liner, Cambridge, MA 091-302	Kiewit Eastern Co.	2,482,000.00
6/10/83	Furnish and Install Duct and Cable System for 13.8KV AC and 750 Volt DC Connections, Met. Boston Area, MA 066-107	L.K. Comstock & Co., Inc. Manzi Electrical Corp. Myles Electrical Co., Inc. (A Joint Venture)	4,242,900.00
7/7/83	Station Improvements, Swampscott & Mishawum Stations, Swampscott & Woburn, Essex and Middlesex Counties, MA 004-102	Delulis Brothers Construction	635,973.18

MBTA CONSTRUCTION CONTRACTS AWARDED - 1983 (cont.)

7/7/83	MBTA Police Radio System, Boston and Cambridge, MA 056-104(R)	Lord Electric Company, Inc. Mass. Electric Construction Co. (A Joint Venture)	3,639,371.00
7/13/83	Commonwealth Avenue Line Segment B, Track and Reservation Improvements Boston, MA M3CN05	J.F. White Contracting Co.	1,715,301.00
7/18/83	Wye Connector, South Station, Boston, MA S6CN07	Sutton Corporation	1,399,170.00
7/22/83	Systemwide Trackwork, Southwest Corridor Project, Boston, MA 097-403	Modern Continental Construction Co., Inc.	17,144,000.20
7/26/83	Temporary B & M Maintenance Facility, Southhampton Yards, Boston, MA R4CN09	C-Q Construction Corp.	241,980.00
7/26/83	Remove and Install Bus Hoists, Salem and Albany Streets Bus Garages, Medford and Boston, MA 100-109	Rich Construction Corp.	502,000.00
8/10/83	Erect Building, Furnish and Install Miscellaneous Materials for North Station Substation 14N, Boston, MA 066-114	W.T. Rich Co., Inc.	3,139,235.00
8/24/83	Subway Tunnel Ventilation Shaft B-6, Long Wharf, Boston, MA 103-103	Schiavone Construction Co., Franki Foundation Co. (A Joint Venture)	5,059,079.00
8/25/83	Section II, Line Construction (Sta. 2160 + 56 to Sta. 2180 + 00), Southwest Corridor, Boston, MA 097-219	John Mahoney Construction Co., Inc./Whittier Equipment Corp. (A Joint Venture)	16,813,497.00
9/7/83	Lynn Bus Garage, Improvements, Lynn, MA 100-113	W. T. Rich Co., Inc.	1,570,000.00
10/4/83	Track Rehabilitation, Attleboro to Hyannis, Bristol, Plymouth and Barnstable Counties, MA C0CN04	Perini Corp.	10,717,235.00
10/28/83	Repairs to Elevated Reinforced Concrete Bus Deck, Dudley Street Station, Boston, MA RACN10	Building Construction, Inc.	75,500.00
11/18/83	Southwest Corridor Project, Section III, New Green Street Station, Boston, MA 097-308	J.F. White Contracting Co.	3,384,000.00

MBTA CONSTRUCTION CONTRACT AWARDED — 1983 (cont.)

11/23/83	Falmouth Secondary Track, Repairs to Culvert, Cataumet (Bourne) Barnstable County, MA C0CN03	Pilgrim Construction Corp.	59,800.00
12/1/83	Section II, Roxbury Crossing Station Construction, Southwest Corridor, Boston, MA 097-214	Modern Continental Construction Co. Inc.	3,547,000.00
12/29/83	Section II, Jackson Square Station, Southwest Corridor 097-215	The Modern Continental Construction Co., Inc.	3,957,000.00
12/29/83	Southwest Corridor Project, Systemwide Transit Traction Power and AC Power 097-405	Lord Electric Co., Inc. Mass Electric Construction Co. A Joint Venture	12,516,768.00
12/29/83	Southwest Corridor Project, Systemwide Elevators 097-415	Montgomery Elevator Co.	1,574,000.00



FY'83 FUNDING SOURCES SECTION 3 RAIL MODERNIZATION

PROJECT	UMTA NUMBER	FED. SHARE GRANT AMOUNT	APPROVAL DATE
1. Commuter Rail Imps. Ph. II	MA-03-0117	\$ 763,035	03/31/83
2. RDC Rebuild	MA-03-0099	18,000,000	05/31/83
3. Tunnel Rehabilitation	MA-03-0085-03	6,143,850	06/01/83
4. Park-Ride	MA-03-0114-01	252,000	05/31/83
5. Commuter Rail Imps. Ph. IV	MA-03-0111-02	3,450,000	05/31/83
6. Plant Imps. Phase V (Part 1)	MA-03-0123	9,410,472	08/15/83
7. Commuter Rail Imps. Ph. IV (Jobs Bill)	MA-03-0111-03	4,350,000	08/15/83
8. Commuter Rail Imps. Ph. III	MA-03-0106-02	440,640	08/15/83
9. Systemwide Signal/Comm. Imps.	MA-03-0084-03	533,328	08/15/83
10. Systemwide Electrification Imps. Program (Part 1)	MA-03-0124	940,000	08/15/83
11. Purchase No. 2 South Shore Cars	MA-03-0122	25,600,000	08/15/83
12. Pass Program Enhancement	MA-03-4001	120,000	09/01/83
13. Light Rail Vehicle Regeneration	MA-03-0022-04	700,000	09/30/83
		<hr/> \$70,703,325	

FY'83 FUNDING SOURCES MISCELLANEOUS FUNDING

PROJECT	UMTA NUMBER	FED. SHARE GRANT AMOUNT	APPROVAL DATE
SECTIONS 3 & 5 - BUS CAPITAL			
1. Purchase of New Transit Buses	MA-03-0093-03	\$ 3,378,340	12/9/82
	MA-05-0018-03	1,276,000	12/9/82
2. Purchase of New Transit Buses	MA-05-0018-04	4,793,231	9/30/83
		<u>\$ 9,447,571</u>	
SECTION 5 - OPERATING ASSISTANCE			
1. Operating Assistance	MA-05-4095	\$ 3,569,006	12/17/82
	MA-05-4095-01	12,622,748	02/22/83
2. Commuter Rail Operating Assistance (1983)	MA-05-4108	5,160,447	09/30/83
		<u>\$21,352,201</u>	
SECTION 9 - TECHNICAL STUDIES			
1. Management Study for Performance Improvements	MA-09-0105	\$ 200,000	07/25/83
		<u>\$ 200,000</u>	
SECTION 6 - RESEARCH & DEVELOPMENT			
1. Audio Visual Program	MA-06-0151	\$ 15,000	04/07/83
2. Bus Revenue Collection	MA-06-0160	38,400	08/11/83
3. Wheel Flange Wear	MA-06-0167	198,000	08/18/83
		<u>\$ 251,400</u>	
SECTION 9A - BLOCK GRANT			
1. Power Improvements Track Improvements	MA-90-0003	\$ 7,889,420	02/22/83
		7,089,580	
2. Silverbird Upgrade	MA-90-0003-01	440,000	06/02/83
3. Program of Projects (Feasibility Study)	MA-90-0003-03	500,000	07/29/83
4. Program of Projects (Rolling Stock Replacement & Plant & Facility Procurement, etc.)	MA-90-0003-04	5,099,000	09/30/83
		<u>\$21,018,000</u>	
	TOTAL	<u>\$52,269,000</u>	

FY'83 FUNDING SOURCES SECTION 23 INTERSTATE TRANSFER

PROJECT	UMTA NUMBER	FED. SHARE GRANT AMOUNT	APPROVAL DATE
1. Southwest Corridor	MA-23-9007-10	\$ 58,000,000	12/17/82
2. Southwest Corridor	MA-23-9007-11	35,002,337	03/31/83
3. Red Line Northwest	MA-23-9008-06	11,997,665	03/31/83
4. Northwest Extension	MA-23-9008-07	1,969,977	09/30/83
		<u>\$106,969,979</u>	

(October 1, 1982 - September 30, 1983)

	FEDERAL SHARE
Rail Modernization	\$ 70,703,32
Interstate Transfer	106,969,97
Bus Capital	9,447,57
Operating Assistance	21,352,20
Technical Studies	200,00
Research & Development	251,40
Block Grant	21,018,00
TOTAL FY'83 FUNDING	<u>\$229,942,47</u>

MATERIALS DIRECTORATE

In 1983 **Materials** contracted for more than \$130 million in materials, supplies, and equipment associated with the construction and expanded operations of the MBTA system.

In May the Authority signed an \$11.8 million contract with General Electric Company for rehabilitation of 44 Red Line (so-called "Bluebird") cars. Six more cars were included in the project in December 1983. All are being assembled in GE's South Boston facility. Rehabilitation of the remaining 38 Bluebirds was performed at the MBTA Cabot Carhouse. Twelve rebuilt Bluebirds were placed in service in 1983, bringing the total (GE and MBTA) to 36 completed since 1981.

Specifications were developed for the purchase of 54 new Red Line cars, the first of which should arrive in 1986. The new cars will enable the Authority to expand from four-car to six-car trains on the Red Line, which will be extended 3.2 miles from Harvard to Alewife.

Materials procured nine additional Light Rail Vehicles (LRVs) now in revenue service. As part of its continuing program to modify and improve reliability of LRV cars, the Authority procured new parts, including chevron springs and couplers, for the entire fleet.

A \$52.1 million contract was awarded to Kinki Sharyo for the

purchase of fifty Articulated Light Rail cars for the Green Line. These new No. 7 cars will be assembled at a site within the MBTA service area in the fall of 1985.

Coach Builders of Springfield, Massachusetts rebuilt seventy GMC buses at an average cost of \$45,000 per bus, which saved approximately 233 percent over the cost of new equipment.

The MBTA also purchased 15 specially equipped vans to expand "The Ride" program for people with special needs.

Materials implemented elevator and escalator maintenance contracts with Montgomery Elevator, Otis Elevator, and Westinghouse Elevator; initiated contracts for the conversion of 500 Electronic Fare Boxes to vacuum-type fare boxes; saved the Authority approximately \$1.7 million through use of outside contractors for security and cleaning services; and contracted for major revenue vehicle maintenance and systemwide needs.

A significant step was taken to assure quality control of Authority material through implementation of the Purchasing Analysis and Specifications Program.

Governor Michael S. Dukakis dedicates facility in South Boston where Red Line cars are being rebuilt.



TREASURER-CONTROLLER'S DEPARTMENT

Treasurer-Controller employed innovative financing techniques during 1983 to reduce the MBTA's capital expenses. The Authority issued \$121 million in long-term bonds in March followed by \$71.2 million in refunding bonds to cover portions of 1981 and 1982 bonds. Lower interest rates at the time of refunding enabled the Authority to realize a considerable savings.

In addition, the MBTA negotiated its third "Safe Harbor" lease in December 1983. In this transaction, the Authority "sold" the tax benefits associated with the purchase of LRVs and the refurbishment of PCCs and Red Line Cars. The transaction netted approximately \$700,000.

Beyond financing, **Treasury-Controller** ensured Authority com-

pliance with certain budget provisions of Chapter 581 (Management Rights). In 1983, the Authority moved to a July fiscal year for budgeting purposes, although it continues to operate on a January fiscal year for assessing purposes. This necessitated a semi-annual review of all Authority financial statements by independent auditors, which **Treasurer-Controller** managed.

Finally, **Treasurer-Controller** improved its reimbursement schedule for Commuter Rail services. The Authority has thus increased the frequency and timeliness of reimbursements to twice annually, thereby improving cash flow to Authority accounts.

Red Line Rebuild Program.



PERSONNEL DIRECTORATE

In June the Personnel and Labor Relations Directorate was reorganized to form separate directorates. **Personnel** is responsible for employee training and development, wage and salary administration, performance appraisal systems, pre-employment testing and screening, internal job posting and selection, and the employee services unit.

During the year a revised performance appraisal system for executive personnel was designed and implemented. The new system is based on a "management by objectives" process and ties salary increases to performance and accomplishments. All executives are reviewed annually at the end of the fiscal year and measured on the previous year's performance.

The Authority's Educational Assistance and Employee Development Programs were expanded with the help of a two-year UMTA grant to further the professional development of the Authority's managers, supervisors and technical personnel. The Employee Development Program now permits greater management participation in development seminars and courses at local colleges on topics such as executive effectiveness, strategic planning, financial

control, productivity, leadership, motivation, communications and management sciences.

The Employee Services Unit, which provides in-house and referral services to troubled employees, increased its visibility in 1983. System-wide substance abuse briefings were conducted at field locations; representatives of the Employees Services Unit participated in new employee orientations at the Cabot and Charlestown Garages as well as the training programs for Starters, Inspectors and District Supervisors. Additional sites were found for Alcoholics Anonymous and Alanon meetings. As a result of these efforts, the ESU caseload increased from under 500 to over 600 annual visits and 255 new referrals were made.

The Employment Clinic, rebuilt at a cost of \$197,000 after being destroyed by fire in October of 1981, reopened in April.



LABOR RELATIONS AND WORKER'S COMPENSATION DIRECTORATE

After a period of labor unrest resulting from budgetary restraints and implementation of the Management Rights legislation, the labor-management relationship stabilized in 1983. The number of bargaining units has been consolidated from 30 in 1982 to 26. Statutory productivity committees have been established to insure cost-effective work practices and improvements in the quality of work life at the Authority, both of which should contribute to labor stability.

During 1983, **Labor Relations** completed negotiations for collective bargaining agreements with 22 of the 26 bargaining units at the Authority. With the exception of the few units currently proceeding to arbitration, all Authority union employees are under contract until March 31, 1985.

The Healy Arbitration Award of January 15, 1983 established wages and terms of employment for Local Division 589, the

Authority's largest union, and similar provisions were negotiated with most of the remaining unions. These terms include a wage freeze of at least one year, followed by 20.5 percent in wage increases compounded over a 51-month period (approximately 4.8 percent per year); part-time employees or lower, entry-level positions were created for the first time; and elimination of several costly and outdated work rules, including the "past practice" clause.

All of the labor contracts currently in effect incorporate the Management Rights language of Chapter 581, Acts of 1980 which abolished automatic cost-of-living increases and gave the Authority the right to hire part-time workers and to subcontract for goods and services. Cost savings through 1983 attributable to Management Rights reforms are estimated at \$60 million.

Through arbitration, **Labor Relations** reached favorable decisions in the areas of subcontracting, reductions-in-force and wage rate disputes. Of particular importance are decisions which have effectively eliminated automatic wage increases for building tradesmen and certain Local 589 classifications. Whereas wages for these groups were previously based on a percentage of the private sector "prevailing" rate, they are now negotiated independently, allowing greater control and predictability in the budget process.

A new pension agreement now covers most Authority employees. Modest improvements were negotiated in the existing benefits formula and increases were granted to retirees. Lawsuits brought by both the Retirement Board and Local 589 against the Authority were also resolved by this agreement. These improvements were realized without increasing contributions to the fund, as a result of demographic changes in the workforce and expanded returns on pension fund investments.

To strengthen efforts to monitor Worker's Compensation cases and improve their handling, the Authority contracted with the Boston-based law firm of Murphy & Beane to administer all compensation claims occurring on or after August 1, 1983.

Set forth below are claims filed since 1977, reflecting the legislatively-mandated escalation in weekly compensation benefits for the same period:

Year	Number of Claims	Weekly Benefits	
		(Jan)	(Oct)
1977	2,376	\$140.00	\$150.00
1978	2,413	150.00	211.37
1979	2,395	211.37	227.31
1980	2,464	227.31	245.48
1981	2,543	245.48	269.93
1982	2,512	269.93	297.85
1983	2,291	297.85	320.29

Claims for 1983 are approximately nine percent fewer than for 1982, and at their lowest level in seven years.

MANAGEMENT INFORMATION SYSTEMS DIRECTORATE

MIS was established in 1982 to provide accurate and timely information to assist daily planning and management. MIS transcends department-level data files, creating in their place an Authority-wide, computer data system.

During 1983, a Vehicle Maintenance System to track repairs on buses and LRVs was field-tested and put into daily use by the eight bus garages. An Engineering & Maintenance Message Center System now permits instant review of incidents involving Authority

property and equipment. A Throughput System offers video status of rapid transit vehicle trips and estimated passenger counts, and compares these to scheduled trips. And a Transportation Scheduling System produces computerized timetables.

In addition, Police's computer-based system was expanded and design of the Authority's first modern automated Human Resource System was completed, innovating the Accounts Payable and Material Reorder systems.

Davis Station



POLICE DEPARTMENT

Police celebrated its fifteenth anniversary in 1983, a year that saw new leadership, 38 new officers and a continued reduction of serious crimes on the MBTA.

The appointment of 38 new police officers raised the total from 69 to 107 officers and brought the **Police** complement to 114 personnel. The settlement of a long-negotiated contract between the Authority and the MBTA Police union provided MBTA police officers a funded pension system for the first time.

Part I major crimes declined by 16.4 percent, from 2,240 reported incidents in 1982 to 1871 incidents in 1983. Arrests increased 24 percent, from 669 in 1982 to 837 arrests in 1983.

A comprehensive seven-point Plan of Action for Transit Security was launched by Governor Michael S. Dukakis during 1983. The plan includes a three-week training program for 300 Starters and Inspectors that will result in their appointment as Special Railway Police Officers; a \$4.5 million communications system with closed-circuit TV monitors at four stations and experimental "citizen talk-back" radios at six stations; closer coordination with other police departments and expanded community outreach.



REAL ESTATE MANAGEMENT

Property appraisals, acquisitions and dispositions, relocations associated with Authority construction programs and the MBTA Land Management System made **Real Estate** more efficient in 1983. An Appraisal Selection Committee was established to maximize Authority income, *Procedures for Joint Development of Property* were adopted, license procedures were streamlined, and Phase I of a new Computerized Railroad Real Property Inventory was completed.

The sale, lease or other use of Authority property in 1983 brought in approximately \$4.2 million, a twenty percent increase over 1982 revenues of \$3.5 million.

Joint Development initiatives generate MBTA savings and revenues in several ways: they result in private capital improvement of Authority facilities and private maintenance of those facilities, thereby reducing MBTA expenses. Revenues from the projects increase MBTA income, as does growth in ridership stimulated by property development. In addition, the projects provide tax revenues to host cities and towns.

Gilbane Properties, Inc. was designated as developer for the Route 128 Station site, a joint venture with the MBTA. The proposed project includes a 190,500 square foot office building, a 211-room hotel and a completely modernized station.

Southwest Corridor Project



LAW DEPARTMENT

Employment and labor relations cases accounted for much **Law** activity in 1983. Of 21 labor relations lawsuits pending in 1982, 15 were resolved.

Two unions again challenged Management Rights (Chapter 581, Acts of 1980 [see **Labor Relations**]) and the arbitration reform law (Chapter 405, Acts of 1978) on constitutional grounds. This was the same case refused hearing by the United States Supreme Court in 1982. The U.S. Court of Appeals, which upheld the constitutionality of these enactments in 1981, again denied the appeal and awarded sanctions against the unions involved.

The MBTA also successfully vacated an arbitration award which violated Management Rights and persuaded the lower court in August to strike certain provisions from another arbitration award. These legal victories strengthen the Authority's ability to control employee performance and organization, and to contract out for services as authorized by Management Rights.

Law handled 2,856 personal injury and property damage claims in 1983.

2 YEAR COMPARISON SUITS AND CLAIMS ACTIVITY

	1982 12 months	1983 12 months
Claims Settled	1,319	1,482
Cost of Claims	\$ 681,867	\$ 906,210
New Lawsuits	599	465
Lawsuits Settled and Paid	436	358
Cost of Lawsuits	\$4,658,483#	\$3,122,289
Average Cost	\$ 10,685#	\$ 8,722
Average Cost/Case Suits and Claims	\$ 3,043	\$ 2,244

#One settlement in bus accident
\$1,796,520 to an 88-year-old woman.

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Board of Directors**

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**Comprehensive Program
for Mass Transportation**

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COMPREHENSIVE PROGRAM FOR MASS TRANSPORTATION

The MBTA must comply with planning and programming requirements established by State and Federal Law.

At the state level, the Executive Office of Transportation and Construction (EOTC) is responsible for the Comprehensive Program for Mass Transportation in accordance with Chapter 161A, Section 5 (g) and (h) of the General Laws of the Commonwealth; as amended by Section 7 of Chapter 1140, Acts of 1973.

The statute states that the Authority's capital investment program and plans for mass transportation "shall be developed in consultation and cooperation with the Authority, and in consultation with the Executive Office of Communities and Development, the Metropolitan Area Planning Council, and such other agencies of the Commonwealth or the Federal Government as may be concerned with said program and plans." The program and any revisions are subject to the approval of the Advisory Board.

The program must include a long-range plan for the construction, reconstruction, or alteration of mass transportation facilities within the Authority's district; a schedule for the implementation of the program; and comprehensive financial estimates of cost and revenues.

The current Program for Mass Transportation remains that approved by the Advisory Board on December 21, 1978.

To comply with Federal Requirements, the MBTA, as one of the six agencies constituting the Metropolitan Planning Organization (MPO), cooperated with those other agencies in the preparation of several required certification documents: the Unified Planning Work Program, the Transportation Plan, and the Transportation Improvement Program. All of these documents were revised and approved by the MPO during 1983.

1983 LEGISLATION

The following laws affecting the Authority were enacted during the 1983 session of the General Court:

Chapter 289 — General Appropriations Act. (Contains MBTA contract assistance debt service, fuel reimbursement and commuter rail aid.)

Chapter 637 — An Act providing for a transportation development and improvement program for the Commonwealth (Transportation Bond Issue).

With the Board of Directors' approval, the following legislation was filed during the 1983 Session of the General Court.

1. An Act relative to the granting of certain interests in land under Boston Common by the City of Boston to the Massachusetts Bay Transportation Authority in order to extend the subway platforms at Park Street Station.

(Article 97 of the Amendments to the Constitution requires legislation to transfer any interest in park land from one governmental agency to another.)

2. An Act relative to the hiring for certain positions by the Massachusetts Bay Transportation Authority.

(This legislation would prohibit the Authority from hiring certain persons as operators, collectors or guards and would allow the Authority to receive criminal offender information [criminal records].)

3. An Act establishing a claims and indemnity procedure for the Massachusetts Bay Transportation Authority and the officers and employees thereof.

(This proposal would impose a one hundred thousand dollar limit on certain claims against the Authority. This same limitation is now applicable to the Commonwealth and cities and towns under legislation enacted in 1978.)

4. An Act relative to income tax credits for employees providing all or part of certain expenses for public transportation.

(This proposal would authorize a tax credit for an employee who subsidizes in whole or part prepaid transit passes or commuter rail ticket. The bill provides for a 50% credit.)

5. An Act relative to the transfer of all vehicular bridges carrying public ways over tracks or rights-of-way of railroads within the Commonwealth.

(This proposal provides that the D.P.W. take over the care and ownership of vehicular bridges now owned by the Authority. Current law enables the D.P.W. to take over care and control of railroad bridges.)

6. An Act relative to public ways over tracks or rights-of-way of railroads within the Commonwealth.

(This would relieve the Authority from flagging costs when the D.P.W. is working on bridges that pass over M.B.T.A. commuter rail rights-of-way.)

7. An Act amending the law relative to the use and occupation of certain land in the city of Cambridge by the Massachusetts Bay Transportation Authority.

(This proposal would extend occupancy of land at Bennett Street by the Authority.)

8. An Act relative to the payment of fuel and special fuels excises by the Massachusetts Bay Transportation Authority.

(This legislation seeks an exemption from the payment of excises for fuel and special fuels consumed in the operation of Authority vehicles. Under current law the Authority pays such excises and is reimbursed about 80% of the amount paid. This legislation

COMPREHENSIVE PROGRAM FOR MASS TRANSPORTATION (cont.)

seeks to eliminate payment and the procedures required for reimbursement.)

9. An Act relative to the MBTA acting as an electric utility.

(This proposed legislation would provide options to the Authority in obtaining the most economic source of power.)

The following is a list of proposals prepared by the MBTA and filed by Gov. Michael S. Dukakis as a anti-crime package:

1. An Act relative to the unauthorized sale of passes and tokens for certain transportation facilities.

(This proposal provides penalties for the offenses stated.)

2. An Act relative to non-criminal disposition of certain misdemeanors.

(This proposal would allow a police officer to ticket an offender for certain violations, such as fare evasion, disorderliness, smoking, trespassing and littering. The first three offenses provide a fine of \$20.00. A fourth and subsequent offense is \$100.00.)

3. An Act amending the law relative to the littering of public transportation facilities.

(This proposal clarifies arrest powers and probable cause.)

4. An Act relative to disorderly conduct in public conveyances.

(This proposal amends existing law to include use of sound devices and clarifies arrest powers and probable cause.)

5. An Act relative to fare evasion.

(This proposal clarifies arrest powers and provides for probable cause.)

6. An Act relative to penalties for smoking in public conveyances and transportation facilities.

(This proposal clarifies arrest powers and provides for probable cause.)

7. An Act relative to assault and battery upon certain employees of the Massachusetts Bay Transportation Authority.

(This proposal would place certain Authority employees under existing law relating to assault and battery upon certain public employees.)

8. An Act relative to the fraudulent use of passes on certain transportation facilities.

(This proposal provides for arrest upon probable cause.)

9. An Act relative to motor vehicles impeding the operation of the Massachusetts Bay Transportation Authority.

(This legislation would allow the MBTA police to tag and/or tow vehicles impeding MBTA operations. It is similar to that filed by the Authority in 1983.)



THE PUBLIC TRANSPORTATION DEFICIT: A BRIEF HISTORY

Since July 1, 1918, public policy in Massachusetts has incorporated the belief that the transportation network in Greater Boston is a public service, benefitting individuals, businesses and government. That policy was first implemented when five public trustees began operating the Boston Elevated Railway (BERY) under the lease conditions of the Public Control Act passed by legislature on May 22, 1918.

The BERY was originally a privately owned company incorporated in 1894 to construct the Tremont Street Subway. By 1897, the BERY was operating almost the entire Boston transit system. Within a few years, the BERY had become beset by financial problems and in 1912 the company reported its first deficit: \$492,000. Again, in 1913, the company reported a deficit of \$496,000. Small surpluses were realized over the next three years but in 1917, a loss of \$118,000 was recorded. In the first half of 1918, losses amounted to \$572,000. That year, the Legislature passed the Public Control Act placing the BERY under public control. Deficit for the first 12 months of the public takeover escalated to \$3.1 million primarily due to maintenance that had been deferred pending passage of the Act.

In 57 of the 65 years since the 1918 Public Control Act, public transportation has incurred a deficit. The eight years of surplus were 1922, 1923, 1925, 1927, 1928, 1929, 1942 and 1943. The surplus was never more than \$1.9 million. The Metropolitan Transit Authority (MTA), comprising 14 cities and towns, ran the system from 1948 through August 3, 1964. It had deficits, ranging from \$2.8 million to \$21 million, assessable on the communities. The Massachusetts Bay Transportation Authority (MBTA), comprising 79 cities and towns, is the successor to the MTA. Its net cost of service is apportioned between the 79 member communities and the rest of the Commonwealth.

Rising operating expenses, especially wage and fuel costs, are directly attributable to inflation. The spiraling costs continue to far outdistance revenue from fares paid by increased numbers of passengers.

The sources of funding for public transit, passenger revenue, local taxation, and state aid were expanded to include the Federal Government with the passage of the Urban Mass Transportation Act of 1974 as amended by the Surface Transportation Assistance Act of 1978 and the most recent Federal Public Transportation Act of 1982. These Acts enable the Authority to become eligible for assistance in both the funding of the systemwide operation and Commuter Rail.

WHERE THE RIDERS ARE

Revenue from transportation — the rider's fare — pays for about one-fourth of the operating costs of the Massachusetts Bay Transportation Authority.

The tables below show the revenue from the various types of transportation the MBTA operates on the surface and on rails. Revenue to Railroad Operations is not included in the (T) total Transportation Revenues because this (T) service is operated by the Boston & Maine Corporation and these revenues are included as a reduction in the Railroad contract costs. The streetcar and bus revenue figures from each "rating station" — the garage where bus and streetcar operators pick their route on the basis of their seniority rating — give a further breakdown of where people use public transportation.

1983 Revenue from Transportation

Rapid Transit

Orange Line	\$13,407,988.
Blue Line	3,186,353.
Red Line (Harvard-Ashmont)	11,870,891.
Red Line (South Shore Extension)	5,160,373.
Green Line Central Subway	15,677,330.
Total Rapid Transit Lines	<u>49,302,935.</u>

Surface Lines

Streetcar	8,736,370.
Trackless Trolley	1,247,373.
Bus	34,620,838.
Total Surface Lines	<u>44,604,581.</u>

Miscellaneous

Student Pass Sales	1,015,174.
Chartered Bus	17,396.

Total Miscellaneous	<u>1,032,570.</u>
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TOTAL REVENUE*	<u>\$94,940,086.</u>
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*Rounded Off

Streetcar Revenue by Rating Station

Reservoir-Riverside	\$7,080,087
Arborway-Mattapan	<u>1,656,283</u>
TOTAL REVENUE	<u>\$8,736,370</u>

Bus Schedule by Rating Station

Cabot-Albany, Boston	\$12,289,494
Arborway, Boston	4,913,754
Somerville and Arlington Heights	4,322,791
Salem St., Medford	
Charlestown	6,281,343
Lynn	4,283,756
Quincy	<u>2,529,699</u>
TOTAL BUS REVENUE	<u>34,620,837</u>



MBTA ASSESSMENT PROCEDURES

A question frequently heard from our customers is "how is my town's MBTA assessment determined?" All 79 cities and towns in the MBTA district pay a share of the MBTA's yearly deficit or net cost of service. The assessment formulas for sharing the deficit were originally spelled out in state legislation passed in 1964 when the old MTA district, serving 14 cities and towns, was enlarged to the present regional transportation district and renamed the MBTA. The formulas have been amended by the legislature from time to time in an effort to make the assessment more fair and equitable.

The legislation defines two basic types of MBTA service, "express service" and "local service". Express service refers to rapid transit service on controlled rights-of-way, while local service refers to MBTA buses, trackless trolleys and streetcars in local streets. The net cost of providing each of these types of service is calculated separately and allocated by a different formula.



Type of Service	Portion of Deficit	Who Pays	Basis of Assessment
EXPRESS	75%	all cities & towns	number of commuters (1970 U.S. Census)
	25%	cities & towns with rapid transit & R.R.	boarding counts (except new stations)
LOCAL	50%	65 cities & towns 14 cities & towns	population (1980 preliminary U.S. Census)
	50%	cities & towns with bus service	share of losses sustained locally

MBTA ASSESSMENT PROCEDURES (cont.)

Express Service

Legislation has divided the assessment for the cost of express service into two parts, a 75% portion, and a 25% portion each distributed in a different fashion.

The 75% portion of the net cost of express service is shared by all 79 cities and towns in the MBTA, based on the number of "commuters" living in each municipality. The number of commuters in each city and town was determined from the 1970 Federal Census data and included all people who traveled outside their town to their place of work, whether they used public transportation or not. In the case of the City of Boston, the number of commuters was established so that Boston would be responsible for not less than 30% of this 75% portion.

The remaining 25% of the net cost of express service is shared only by those cities and towns that have one or more express service stations. This part of the assessment is proportional to the number of passengers boarding the rapid transit and railroad lines at stations in each community. By law counts are taken to determine the number of passengers boarding at each station and within each town no less frequently than every two years. However, in 1973, the legislature amended the assessment procedure to exclude from the boarding counts passengers boarding at new rapid transit stations opened after July, 1973. This amendment means that a new station in a community will not result in an increase in its assessment for the 25% portion of express service costs.

Local Service

Local service refers to buses, trackless trolleys, and streetcars operating on local streets. As in express service, the formula for assigning the local service deficit is divided into two parts, in this case two equal or 50% portions. Half of the local service deficit is allocated on the basis of population as determined by the most recent Federal Census (1980); but on the weight of 14 Cities and Towns and 65 Cities and Towns independently. The other 50% of the deficit from local service operations is shared by those cities and towns that have such service, and is based on the proportion of losses incurred in each city or town.

To determine the operating loss incurred in each community, costs are first identified with a mode of service — bus, trackless trolley and streetcar. All direct costs are identified directly with the appropriate mode, and indirect costs are allocated to modes largely based upon the direct charges to each mode each month. Costs by mode are then allocated to specific routes by means of one of six bases depending upon the type of expense involved. Direct costs of operations and maintenance of each rating station (depot), are allocated only to routes emanating from the rating station. For example, costs of operating and maintaining routes from the Quincy Garage are allocated only to the routes in the Quincy Rating Station.

Farebox revenue is sampled on each route four times yearly, and the difference between operating cost and annual revenue determines the yearly profit or loss for each route. This profit or loss is allocated to each city or town on the route. If a town elects to have no local service, buses then make no stops in that town, and the profit or loss from routes passing through that town is distributed among the other towns on the route. For all cities and towns with local MBTA service, the losses and profits from the routes in the community are totaled. Half of the MBTA's local service assessment is then based on the percentage of local service operating losses incurred in each municipality.

As an example of total service assessment, consider a six mile long bus route, with four miles in Town A and two miles in Town B. Assume that the operating cost for the route was \$100,000 a year. Assume also that farebox revenue on the route was \$40,000 a year. The operating deficit would be \$60,000 a year, the difference between operating cost and revenue. Half of this \$60,000 deficit (\$30,000) would be allocated among the 14 Cities and Towns and the 65 Cities and Towns on the basis of population, and half would be allocated to Towns A and B. Town A would have to pay \$20,000 and Town B would be assessed \$10,000 because the bus route operated twice as many miles in Town A as in Town B.

Objectives

The MBTA assessment procedures can be summed up by pointing out two objectives in the formulas. The first objective is to recognize that the cities and towns of the MBTA District comprise one regional transportation district, that all municipalities benefit by the system, and, therefore, all must share some of the deficit. The second objective is to assess properly that portion of the assessment to those cities and towns that are receiving a greater degree of service. To relieve the burden on local government, the State began, in 1973, to pay for part of the MBTA deficit. This state portion has increased because of the passage of Proposition 2½. The federal government is also providing operating subsidies for mass transit under legislation enacted in 1974, as amended.

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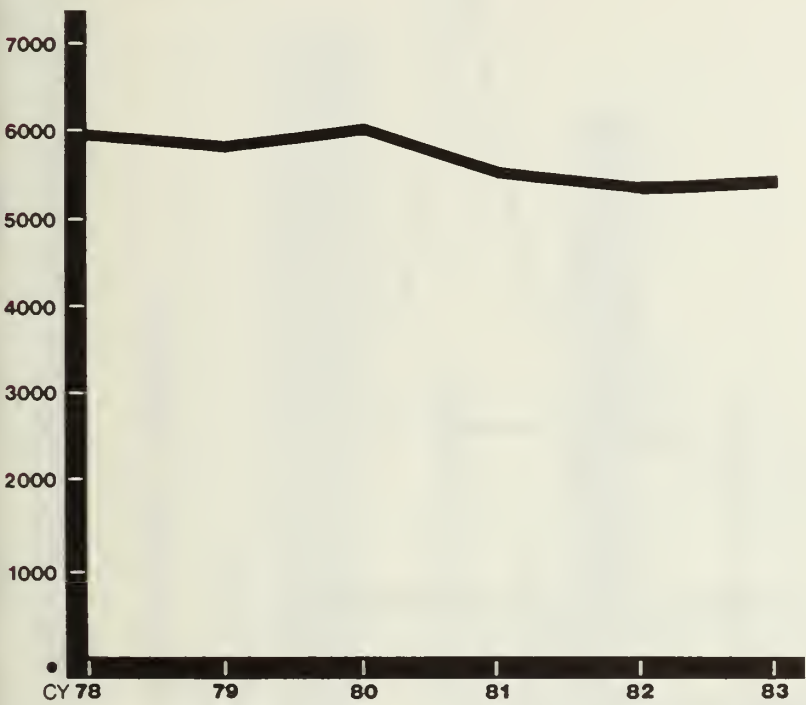
Financial Statements

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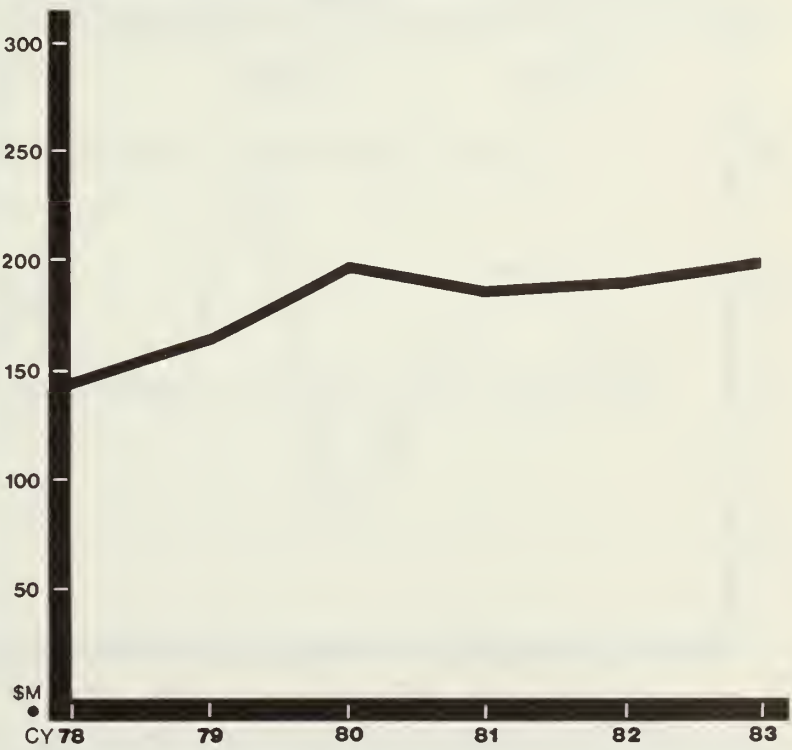
CHARTS AND STATISTICS

The following section contains a graphic representation of some of the achievements of the MBTA in 1983.

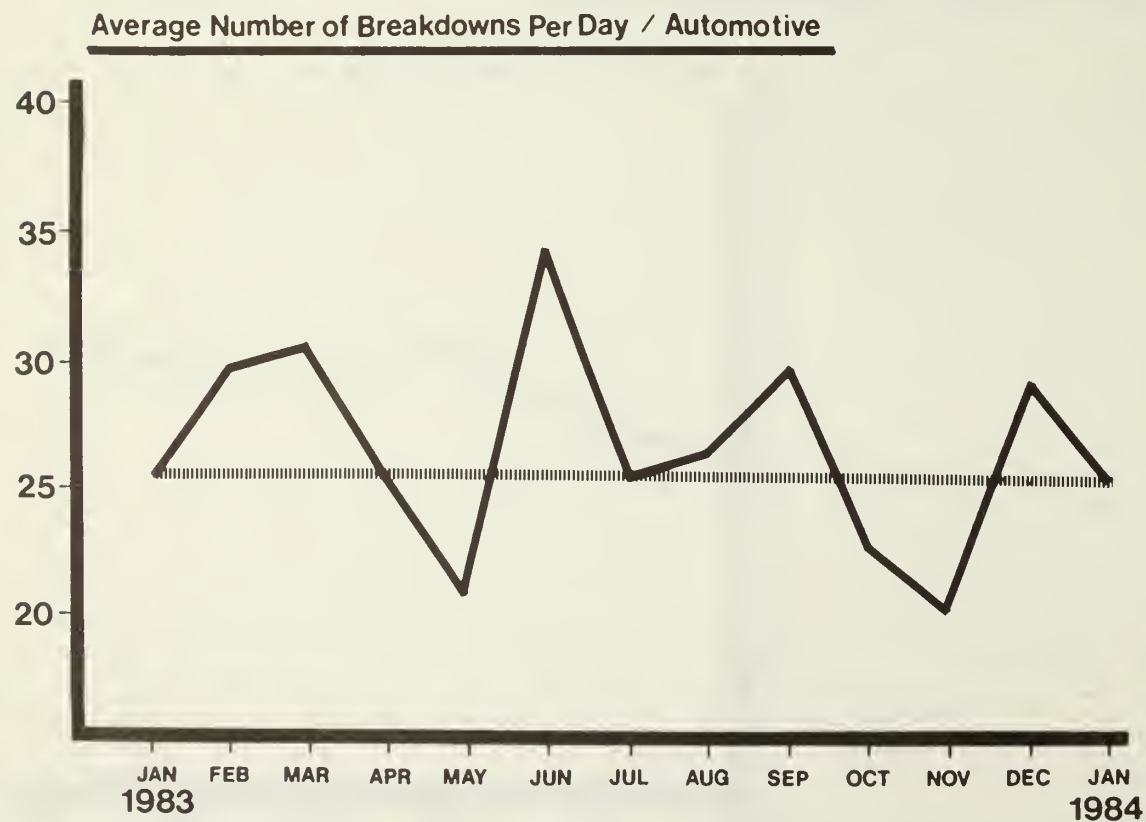
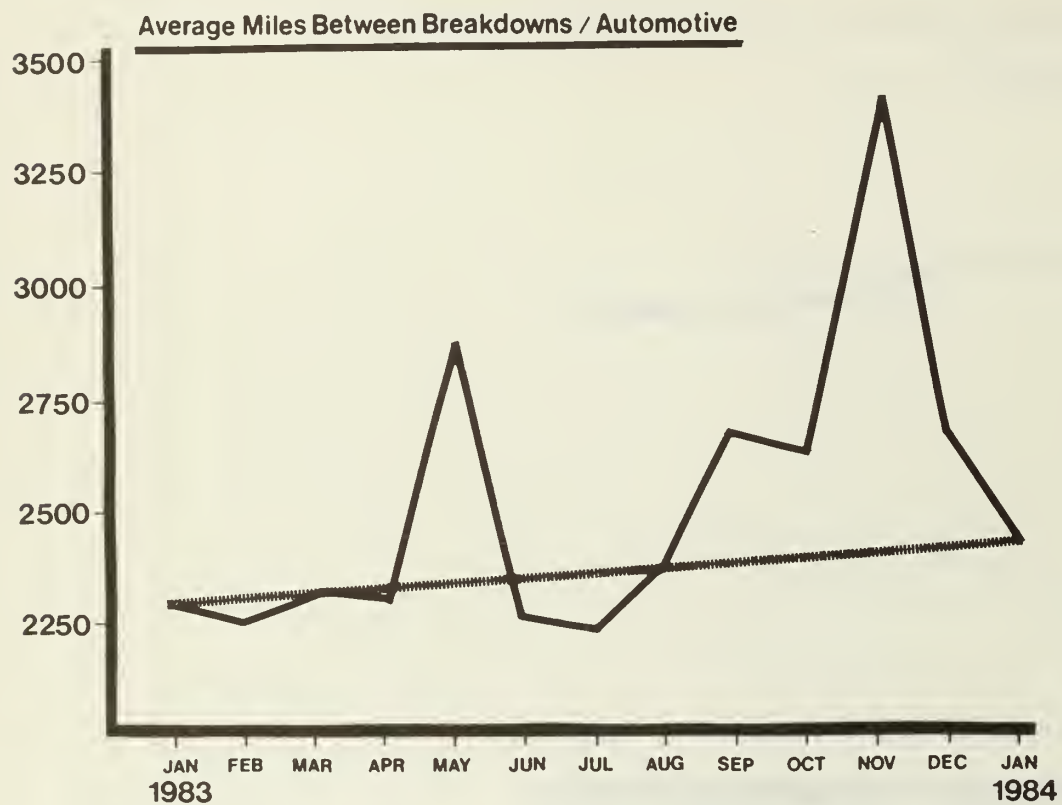
MANPOWER (OPERATING)



NET COST OF SERVICE / LOSS

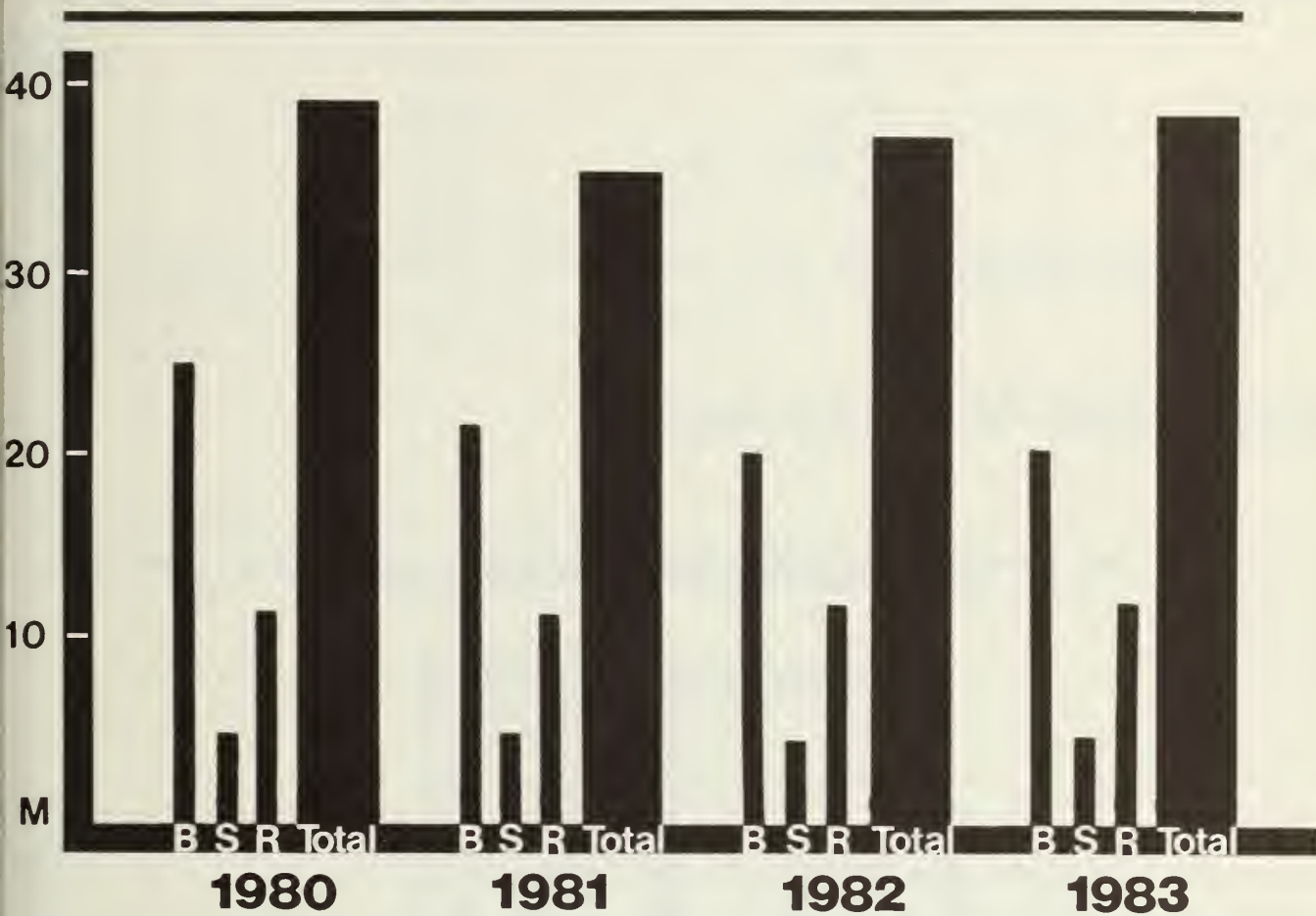


CHARTS AND STATISTICS (cont.)



CHARTS AND STATISTICS (cont.)

Revenue Miles by Mode



B - Bus/Trackless Trolley **S** - Streetcar **R** - Rapid Transit

CHARTS AND STATISTICS (cont.)

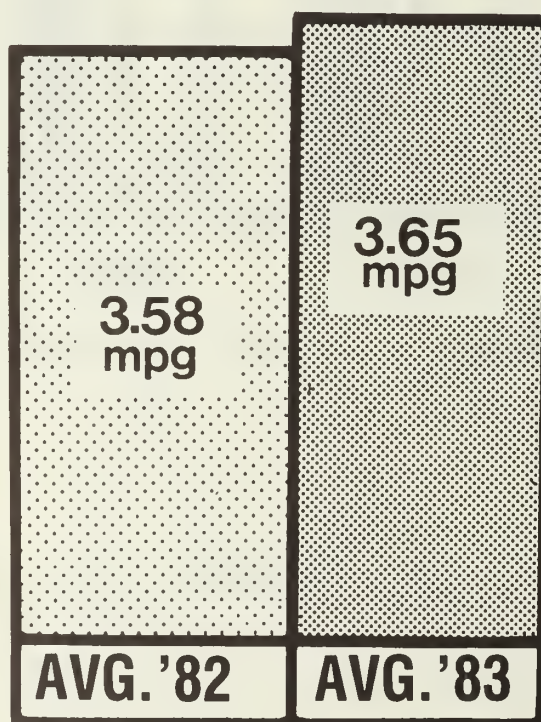
Average Weekday System Passenger Volume (One-way)

	1982	1983	Increase
October	539,843	556,180	3%
November	535,494	551,101	3%
December	508,736	527,880	4%

The above represents data based on the results of farebox surveys conducted by the "T" and CTPS in November of 1982 and 1983.

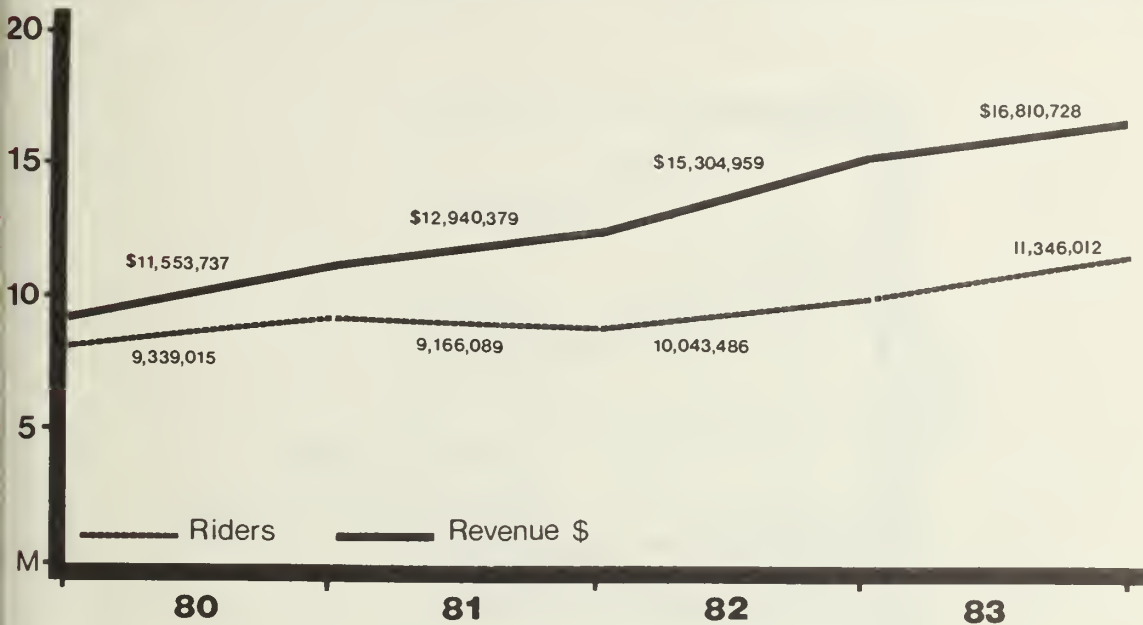
Revenue Miles Per Gal. Bus Fleet

A 2 % INCREASE IN MPG FROM 1982 TO 1983

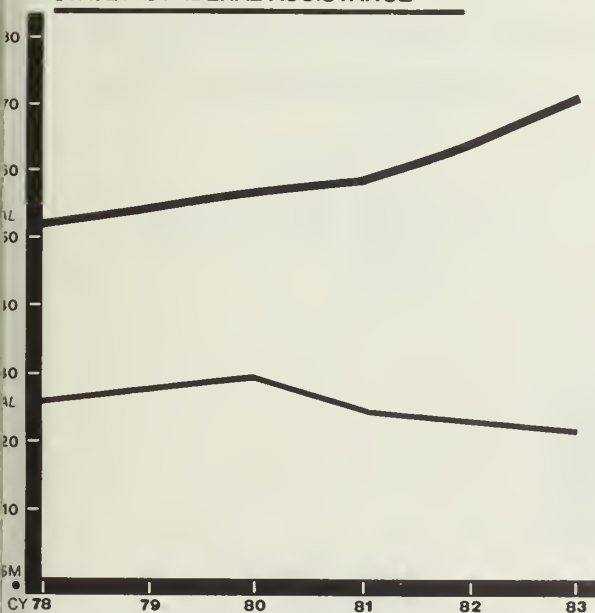


CHARTS AND STATISTICS (cont.)

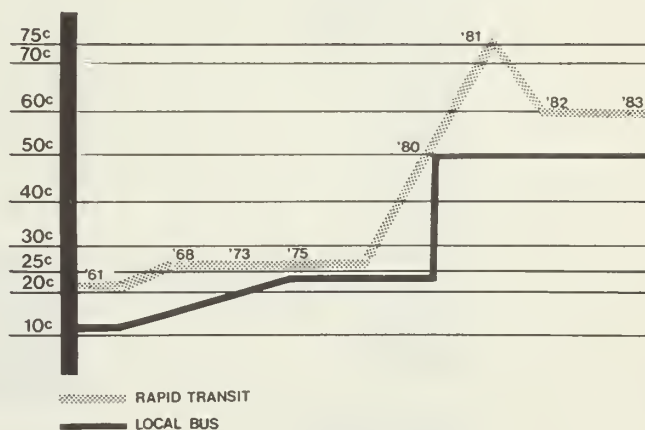
COMMUTER RAIL Ridership and Revenue



STATE AND FEDERAL ASSISTANCE



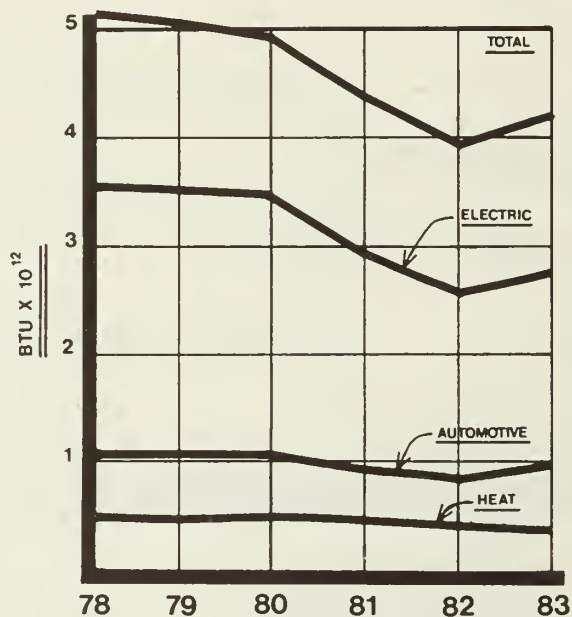
FARE STRUCTURE 1961 - 1983 (RAPID TRANSIT & LOCAL BUS)



State assistance includes contribution to MBTA debt service only.

CHARTS AND STATISTICS (cont.)

MBTA Energy Consumption (Excludes Commuter Rail)



The Ride

(Specialized para-transit door-to-door service for the handicapped)

Communities Served 1977-1983

Arlington (40%)
Belmont (50%)
Boston
Brookline
Cambridge
Chelsea
Everett
Malden
Newton (50%)
Somerville
Wartertown
Winthrop

Square Mileage
Covered: 110

Proposed Expansion 1984

Arlington (60%)*
Belmont (50%)*
Newton (50%)
Revere
Medford

Square Mileage
Covered: 28

*Service extended August 1984

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APPENDIX I 1983 STATISTICS

Population of 79 communities in (T) District
(1980 U.S. Census-Preliminary) 2,608,638

Number of Routes

Bus 153
Streetcar 5
Rapid Transit 3
Trackless Trolley 4
Commuter Rail 8

Number of Vehicles (Active Fleet)

Buses 1,050
Streetcars (PCC's 100, Light Rail Vehicles 125) 225
Rapid Transit Cars 354
Trackless Trolleys 50
Commuter Rail: (Locomotives 38, Coaches 138) 176

Passengers

Weekday Passengers 568,900
 Basic (T) System (Estimated): 527,000
 Commuter Rail (Actual): 41,900
Annual Passengers 165,000,000
 Basic (T) System (Estimated): 153,700,000
 Commuter Rail (Actual): 11,300,000

Stations

Rapid Transit, Including Riverside and Mattapan Lines 83
Commuter Rail 92

Track Miles (One-Way)

Subway 15
Bridges, Elevated, and Surface 48.2

Route Miles (One-Way)

Rapid Transit 42.3
 Red Line: Harvard/Ashmont, 9.6
 Harvard/Braintree, 15.0
 Orange Line: Forest Hills-Oak Grove, 10.8
 Blue Line: Bowdoin-Wonderland, 6.2

APPENDIX I 1983 STATISTICS (cont.)

Rapid Transit Under Construction	8.4
Red Line Northwest Extension, 3.7	
Southwest Corridor Orange Line Relocation, 4.7	
Streetcar	34.8
Riverside-North Station, 12.0; Arborway-Park, 5.7;	
Lake Street-Lechmere Via Commonwealth Ave., 8.0;	
Cleveland Circle-Lechmere via Beacon Street, 6.6;	
Ashmont-Mattapan, 2.5	
Trackless Trolley	15.75
Bus	700
Commuter Rail	500
North Station: to Gardner, 65; to Lowell, 25;	
to Haverhill, 33; to Ipswich, 28;	
to Rockport, 35	
South Station: to Framingham, 22; to Franklin, 28;	
to Stoughton, 19; Attleboro, 31	
Manpower	
Employees (Operating Budget)	5,580
Collective Bargaining Units	26

APPENDIX II MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

COMPARISON OF NET COST OF SERVICE —TWELVE MONTH PERIOD CALENDAR YEARS 1983 (ESTIMATED) V.S. 1982 (ACTUAL)

	1982	1983	Increase/ (Decrease)
Income:			
Revenue from Transportation	\$ 93,272,962	\$ 94,940,216	\$ 1,667,254
Revenue — Railroad Operations	3,365,599	3,784,834	419,235
Non-Operating Income	8,102,602	7,689,134	(413,468)
Gas & Diesel Tax Reimbursement	489,400	484,588	(4,812)
Reimbursement from Outside District	922,589	1,446,200	523,611
Total Income	106,153,152	108,344,472	2,191,820
Operating Wages and Fringe Benefits:			
Wages	138,418,306	146,171,440	7,753,134
Gen. & Adm. Cost Capitalized-Credit	(1,721,868)	(1,197,324)	524,544
MBTA Pensions	19,895,376	20,401,426	506,050
Social Security Taxes	10,644,784	11,031,806	387,022
Workmen's Compensation	3,997,759	5,791,773	1,794,014
Accident and Sickness Insurance	391,213	399,982	8,769
Group Life Insurance	916,364	622,734	(293,630)
Blue Cross — Blue Shield	18,430,479	20,947,840	2,517,361
Unemployment Insurance	195,000	77,000	(118,000)
Uniform and Work Clothes	561,471	683,804	122,333
Fringe Benefits Cost Capitalized — Credit	(7,072,080)	(7,051,649)	20,431
Total Operating Wages & Fringe Benefits	184,656,804	197,878,832	13,222,028
Material and Other Items	32,638,005	37,113,967	4,475,962
Injuries and Damages	2,884,881	4,028,972	1,144,091
Interest on Unfunded Debt	21,384,355	14,411,611	(6,972,744)
Fuel	21,204,360	19,973,360	(1,231,000)
Taxes (other than included above)	990,464	919,942	(70,522)
Railroad Commuter Subsidy	45,254,048	44,926,471	(327,577)
Local Service Subsidies	1,513,087	2,009,955	496,868
Total Operating Expenses and Taxes	310,526,004	321,263,110	10,737,106
Fixed Charges:			
Interest on Funded Debt (MTA)	3,448,135	4,713,326	1,265,191
Interest on Funded Debt (MBTA)	29,635,751	34,832,048	5,196,297
Payment on Funded Debt (MTA)	2,631,926	2,752,926	121,000
Payment on Funded Debt (MBTA)	12,900,835	17,015,000	4,114,165
Miscellaneous Debits (MTA)	90,756	—	(90,756)
Bank Service Charges (MBTA)	73,688	124,333	50,645
Total Fixed Charges	48,781,091	59,437,633	10,656,542
Total Current Expenses	359,307,095	380,700,743	21,393,648

APPENDIX II (cont.)

	1982	1983	Increase/ (Decrease)
Cost of Service in Excess of Income	253,153,943	272,355,771	19,201,828
State Financial Cont. Asst. (MTA)	3,000,000	3,000,000	—
State Financial Cont. Asst. (MBTA)	37,660,763	46,176,296	8,515,533
State Financial Cont. Asst. (RR)	6,004,137	6,041,754	37,617
Federal Op. Asst.	23,199,913	21,338,201	(1,861,712)
Net Cost of Service Loss	\$183,289,130	\$195,799,520	\$12,510,390



APPENDIX III CHAPTER 581

Definition

Chapter 581 of the Acts of 1980 was enacted by the Legislature and signed by the Governor on December 7, 1980. This Chapter is commonly known as the Management Rights Act because it provides MBTA management with the capability to operate the Authority in a manner consistent with normal management prerogatives. These prerogatives, which include most of the major provisions of the Act, include the following:

- 1. The right to direct, appoint, employ, assign and promote officers, agents and employees.
- 2. The right to discharge and terminate employees, subject to specific clauses which prohibit such discharge or termination on the basis of race, color, religion, sex, age, national origin, handicapping condition, marital status, political affiliation, or union activities.
- 3. The right to plan and determine the levels of service provided by the Authority.
- 4. The right to direct, supervise, control, and evaluate the Authority's departments, units, and programs; as well as the right to classify positions and establish duties and productivity standards.
- 5. The right to develop and determine levels of staffing and training.
- 6. The right to determine whether goods or services should be made, leased, contracted for, or purchased on either a temporary or permanent basis.
- 7. The right to assign and apportion overtime.
- 8. The right to hire part-time employees.

Other provisions of the Act include, but are not limited to, various items concerning the responsibilities of the Board of Directors, the sale of notes and bonds, and the change in the Authority's budget from a calendar year basis to the State fiscal year as of July 1, 1983.

Due to a union appeal of this legislation, implementation of Chapter 581 did not occur until October 22, 1981 after the Federal Appeals Court affirmed the legality of the Act's provisions.

Many new measures implemented under Chapter 581 since 1981 have enabled the MBTA to increase service by several million miles, reduce fuel consumption and increase reliability of service, for a total cost savings of \$64.6 million.

	1981	1982	1983
(1) A reduction of approximately 600 employees resulting from contracting of services, introduction of part-time labor, job reclassification and job elimination.		\$21,000,000.	
(2) Continuance of above practices reflects a continued savings in all areas in subsequent years:			
part-time operators			\$5,421,000.
security contracts			284,000.
cleaning contracts			1,724,000.
part-time fuelers			685,000.
(3) Savings associated with the Healy award which, while allowing for some increases in the automatic cost of living, substantially reduced the amount thus netting the following savings:	\$4,800,000.	\$5,400,000.	6,700,000.
(4) Application of the same rate of savings to the remaining union employees approximates additional savings:	3,155,000.	3,472,000.	4,037,000.
(5) Conlon award which removed the Building Trades rate increases from an outside pattern agreement.		704,000.	2,015,000.
(6) Elimination of contribution to the pension fund of hours worked on overtime.	515,500.	616,740.	738,800.
(7) Reduction in overtime paid in 1981.	5,803,000.		
(8) Curtailment of posting and bidding of vacancies.		150,000.	
(9) Elimination of systemwide selection of work by surface operators in 1981.	85,000.		

APPENDIX IV

OUTLINE OF SIGNIFICANT MBTA EVENTS IN 1983

February 2 — "The Ride" program extends to Dorchester/Mattapan, providing door-to-door van service for people with special needs.

March 1 — The MBTA begins restoration of the Gloucester Railroad Drawbridge.

March 9 — An experimental 58-foot articulated bus, with an accordion-like mid-section, is put into service.

March 17 — The MBTA issues \$121 million in general transportation bonds.

March 24 — The MBTA institutes direct bus service to and from Burlington Mall, New England Executive Park, Lahey Clinic and Haymarket Station.

— The Authority continues to expand experimental bus service to Marshfield, Hanover and South Weymouth.

March 26 — The Blue Line Track Improvement Project, the first substantial refurbishment in the Blue Line's 30-year history, is begun.

April 7 — The MBTA receives a \$15 million grant from the federal Urban Mass Transportation Administration to fund track and power improvement projects.

May 5 — The MBTA appoints Boston Police Superintendent William J. Bratton as Chief of the MBTA Police.

May 25 — The MBTA appoints William G. Stead Director of Operations.

June — Governor Dukakis and the General Manager announce a seven-point anti-crime program for strengthening public safety.

July 1 — The MBTA renovates 32 Commuter Rail "Budd Cars".

July 13 — A major expansion of special needs service to 10 wheelchair-equipped suburban bus routes takes effect.

July 22 — The MBTA receives a \$6 million grant from the Urban Mass Transportation Administration for tunnel rehabilitation projects.

July 30 — Work begins on a \$2.5 million Track Improvement program on the Commonwealth Avenue Branch of the Green Line.

September 6 — The new \$71 million Harvard Station opens.

September 13 — The MBTA Advisory Board votes a budget increase of \$32 million.

September 19 — Results from an MBTA Anti-Pickpocket program show a 200 percent increase in arrests and a 19 percent decline in incidents.

September 28 — Gilbane Properties designated to develop a rehabilitation and construction project for the Route 128 Commuter Rail Station in Canton.

October 3 — The first class of Starters/Inspectors graduates from

the security training program as part of the Governor/MBTA anti-crime package.

November 1 — The new Attleboro Electric Train Facility is activated, allowing train cars to be heated overnight while diesel engines are shut off, thereby eliminating noise from idling trains.

November 7 — Crime on the system is down 14.5 percent, arrests are up 25 percent.

November 18 — The MBTA Board of Directors reinstitutes service agreements with the Towns of Bedford, Lexington, Natick and Needham.

December 31 — The MBTA offers free service from 10:00 p.m. to 3:00 a.m. as part of the "First Night" celebrations.



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Financial Statements



To the Board of Directors of Massachusetts Bay Transportation Authority:

We have examined the balance sheet and statement of bonds payable of the MASSACHUSETTS BAY TRANSPORTATION AUTHORITY (a political subdivision of the Commonwealth of Massachusetts) as of December 31, 1983 and 1982, and the related statements of revenue and cost of service, unreimbursed cost of service and changes in financial position for the years then ended. Our examinations were made in accordance with generally accepted auditing standards and, accordingly, included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the financial statements referred to above present fairly the financial position of the Massachusetts Bay Transportation Authority as of December 31, 1983 and 1982, and the results of its operations and the changes in its financial position for the years then ended, in conformity with generally accepted accounting principles applied on a consistent basis.

April 2, 1984.

Arthur Andersen & Co.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
BALANCE SHEET — DECEMBER 31, 1983 AND 1982

ASSETS

(\$000 Omitted)

	1983	1982
TRANSPORTATION PROPERTY , at cost (Notes 1 and 7):		
Transportation property in service	\$1,377,457	\$1,267,892
Less - Accumulated depreciation	<u>305,349</u>	<u>272,980</u>
	\$1,072,108	\$ 994,912
Construction in progress	997,285	796,341
Property held for expansion (Note 9)	<u>13,574</u>	<u>13,574</u>
	<u>\$2,082,967</u>	<u>\$1,804,827</u>
 SPECIAL FUNDS , consisting of cash and certificates of deposit:		
Settlement funds (Note 8)	\$ 57,552	\$ 52,679
Construction funds	20,668	3,641
Federal grant and other special funds (Notes 1 and 7)	<u>1,658</u>	<u>2,895</u>
	<u>\$ 79,878</u>	<u>\$ 59,215</u>
 DEFERRED CHARGES	<u>\$ 12,436</u>	<u>\$ 12,133</u>
 CURRENT ASSETS:		
Cash	\$ 7,897	\$ 1,531
Temporary cash investments	20,364	30,682
Accounts receivable -		
Commonwealth of Massachusetts (Notes 1 and 3)	180,290	181,465
Federal Department of Transportation (Note 4)	16,178	22,980
Other	9,986	11,239
Materials and supplies, at average cost	20,034	17,702
Prepaid expenses	<u>1,954</u>	<u>1,793</u>
	<u>\$ 256,703</u>	<u>\$ 267,392</u>
	<u>\$2,431,984</u>	<u>\$2,143,567</u>

The accompanying notes are an integral part
of these financial statements.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
BALANCE SHEET — DECEMBER 31, 1983 AND 1982

LIABILITIES

(\$000 Omitted)

1983

1982

LONG-TERM DEBT, exclusive of current maturities:

Bonds payable (See separate statement and Note 6)

\$ 597,845

\$ 518,533

Loans payable to Federal Department of

Transportation, including accrued interest of

\$4,714 in 1983 and \$4,143 in 1982 (Note 9)

12,059

11,548

\$ 609,904

\$ 530,081

UNREIMBURSED COST OF SERVICE (Note 1)

\$ (36,211)

\$ (22,411)

GRANTS (Notes 1, 7 and 9):

Federal grants

\$1,626,821

\$1,378,942

State and local grants

27,636

22,296

\$1,654,457

\$1,401,238

Less - Accumulated amortization

137,843

111,504

\$1,516,614

\$1,289,734

COMMITMENTS AND CONTINGENCIES (Notes 1, 2, 7, 8, and 10)

DEFERRED CREDITS (Note 8)

\$ 58,780

\$ 53,984

CURRENT LIABILITIES:

Current maturities of bonds payable

\$ 21,748

\$ 19,768

Notes payable (Note 6)

195,000

195,000

Accounts payable

29,499

38,486

Accrued liabilities -

Payroll (Note 2)

12,600

8,463

Interest

20,216

23,492

Other

3,834

6,970

\$ 282,897

\$ 292,179

\$2,431,984

\$2,143,567

The accompanying notes are an integral part
of these financial statements.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
STATEMENT OF REVENUE AND COST OF SERVICE
FOR THE YEARS ENDED DECEMBER 31, 1983 AND 1982

	(\$000 Omitted)	
	1983	1982
OPERATING REVENUE , not including local and federal assistance:		
Revenue from transportation	\$ 94,940	\$ 93,273
Revenue from other railway operations	3,785	3,366
	<u>\$ 98,725</u>	<u>\$ 96,639</u>
OPERATING WAGES AND RELATED EMPLOYEE BENEFITS:		
Wages (Note 2)	\$ 144,069	\$ 138,418
Medical and dental insurance	19,548	18,431
Pensions (Note 10)	20,538	19,793
Social security taxes	11,047	10,467
Workers compensation (Note 1)	6,454	3,998
Other	1,652	2,064
Employee benefit and general and administrative costs capitalized (Note 1)	(8,653)	(8,514)
	<u>\$ 194,655</u>	<u>\$ 184,657</u>
OPERATING EXPENSES:		
Materials and services	\$ 38,923	\$ 34,149
Depreciation and amortization	37,167	36,538
Fuel	20,589	21,204
Injuries and damages (Note 1)	5,279	2,885
Railroad commuter expense, net (Note 5)	43,226	45,604
Other	1,112	1,155
	<u>\$ 146,296</u>	<u>\$ 141,536</u>
OPERATING LOSS	\$(242,226)	\$(229,554)
NON-OPERATING INCOME (EXPENSE):		
Interest income	6,576	6,582
Sale of tax benefits	606	1,444
Provision for equipment removed from service (Note 11)	(2,496)	(2,456)
Other	57	77
	<u>\$ (4,743)</u>	<u>\$ 5,647</u>
INTEREST EXPENSE:		
Long-term debt	\$ (43,266)	\$ (37,558)
Other	(14,411)	(19,716)
	<u>(57,677)</u>	<u>(57,274)</u>
COST OF SERVICE IN EXCESS OF REVENUE BEFORE EXTRAORDINARY LOSS	\$(295,160)	\$(281,181)
Extraordinary loss on advance refunding of debt (Note 6)	(16,028)	—
COST OF SERVICE IN EXCESS OF REVENUE (Notes 1 and 3)	\$(311,188)	\$(281,181)

The accompanying notes are an integral part of these financial statements.

**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
STATEMENT OF UNREIMBURSED COST OF SERVICE
FOR THE YEARS ENDED DECEMBER 31, 1983 AND 1982**

	(\$000 Omitted)	
	1983	1982
BALANCE AT BEGINNING OF YEAR	\$ (22,411)	\$ (20,147)
ADD - Cost of service in excess of revenue	<u>(311,188)</u>	<u>(281,181)</u>
DEDUCT:		
Net cost of service reimbursable by the Commonwealth of Massachusetts, a portion of which is to be assessed to the cities and towns constituting the Authority (Notes 2 and 3)	192,944	183,289
Contract assistance for debt service pursuant to Section 28 of Chapter 161A of the General Laws, as amended (Note 3)	48,777	40,661
Other contract assistance (Notes 3 and 5)	<u>6,042</u>	<u>6,004</u>
Reimbursement of the Authority's Net Cost of Service (Note 1(a))	<u>\$ 247,763</u>	<u>\$ 229,954</u>
Federal operating assistance pursuant to Sections 5 and 9 of the Urban Mass Transportation Act of 1964, as amended (Note 4)	\$ 21,338	\$ 23,200
Reimbursement of railroad commuter expense by government entities outside the Authority's area (Note 5)	1,274	923
State diesel and gasoline fuel taxes reimbursable to the Authority in accordance with Section 2 of Chapter 563 of the Acts of 1964	<u>485</u>	<u>489</u>
Other Reimbursements	<u>\$ 23,097</u>	<u>\$ 24,612</u>
Amortization of grants (Notes 1 and 7)	<u>\$ 26,528</u>	<u>\$ 24,351</u>
BALANCE AT END OF YEAR	<u><u>\$ (36,211)</u></u>	<u><u>\$ (22,411)</u></u>

The accompanying notes are an integral part of these financial statements.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
STATEMENT OF CHANGES IN FINANCIAL POSITION
FOR THE YEARS ENDED DECEMBER 31, 1983 AND 1982

	(\$000 Omitted)	
	1983	1982
OPERATIONS		
Cash Was Used For -		
Cost of service in excess of revenue	\$311,188	\$281,181
Charges to cost of service not requiring current expenditure of cash:		
Depreciation	(35,617)	(35,793)
Amortization of deferred charges	(2,412)	(1,523)
Interest accrued on federal loan	(244)	(2,802)
Provision for equipment removed from service	(2,496)	(2,456)
Extraordinary loss on advance refunding of debt	(16,028)	-
Interest expense of debt refunded	(3,300)	-
	<u>\$251,091</u>	<u>\$238,607</u>
Increase (decrease) in working capital except for cash and temporary cash investments	\$ 2,545	\$ (24,742)
Payment of bonds payable	51,750	19,768
Other	1,181	(2,953)
Cash Used for Operations and Bond Payments	<u>\$306,567</u>	<u>\$230,680</u>
Cash Was Provided for Operations and Bond Payments By -		
Reimbursement of the Authority's Net Cost of Service	\$247,763	\$229,954
Other reimbursements	23,097	26,955
Cash Provided for Operations and Bond Payments	<u>\$270,860</u>	<u>\$256,909</u>
CAPITAL AND FINANCING ACTIVITIES		
Cash Was Used For -		
Additions to transportation property, net	\$115,308	\$154,653
Other capital expenditures	202,797	183,617
Increase in special funds	20,663	-
Other	-	-
	<u>\$338,768</u>	<u>\$338,270</u>
Cash Was Provided By -		
Grants from federal and other sources	\$253,219	\$319,963
Increase in deferred credit	4,964	-
Issuance of bonds	112,340	60,282
Decrease in special funds	-	163
Forgiveness of federal loan	-	(46,190)
	<u>\$370,523</u>	<u>\$334,218</u>
INCREASE (DECREASE) IN CASH AND TEMPORARY CASH INVESTMENTS	<u>\$ (3,952)</u>	<u>\$ 19,834</u>
Cash and Temporary Cash Investments -		
Beginning of Year	32,213	12,379
End of Year	<u>\$ 28,261</u>	<u>\$ 32,213</u>

The accompanying notes are an integral part of these financial statements.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
STATEMENT OF BONDS PAYABLE
DECEMBER 31, 1983 AND 1982

(Notes 6 and 7)

Massachusetts Bay Transportation Authority General Transportation System Bonds issued under General Laws, Chapter 161A, Section 23 of the Commonwealth of Massachusetts, are all payable in annual installments on March 1; interest is payable semiannually on March 1 and September 1. The bonds were issued to provide funds for the financing of the Authority's plant and equipment improvement program. (Dollar amounts in thousands)

Description	Year of Maturity	Approximate Annual Payments	Average Interest Rate	Bonds Outstanding December 31	
				1983	1982
1967 Series A Bonds dated March 1, 1967	2007	\$2,600	3.79%	\$ 62,400	\$ 65,000
1970 Series A Bonds dated Sept. 1, 1970	2010	1,540	6.40	41,480	43,020
1972 Series A Bonds dated Sept. 1, 1972	2012	865	5.29	25,440	26,760
1974 Series A Bonds dated June 1, 1974	2014	1,800	6.43	56,100	58,200
1977 Series A Bonds dated Sept. 1, 1977	2017	2,510	6.25	68,490	71,000
1979 Series A Bonds dated May 1, 1979	2019	1,700	6.98	53,200	54,900
1981 Series A Bonds dated Oct. 1, 1981	2001	2,250	12.14	15,750	42,750
1982 Series A Bonds dated April 1, 1982	2005	2,975	13.37	29,047	60,282
1983 Series A Bonds dated March 15, 1983	2008	2,795	9.77	112,840	-
1983 Series A Refunding Bonds dated Aug. 15, 1983	2004	3,295	9.06	<u>71,210</u>	<u>-</u>
Total General Transportation System Bonds Payable				<u>\$535,957</u>	<u>\$421,912</u>

Bond Anticipation Notes

The proceeds from the sale of these notes were deposited in the Construction funds account and were being used for capital costs of the transportation system. The interest rate was 5.75% at December 31, 1982. The Authority refinanced the notes through the issuance of the March 15, 1983 General Transportation System Bonds identified above. These notes have been classified as Long-Term Debt, Bonds Payable on the balance sheet at December 31, 1982.

<u>-</u>	<u>\$ 30,000</u>
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The accompanying notes are an integral part of these financial statements.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
STATEMENT OF BONDS PAYABLE
DECEMBER 31, 1983 AND 1982

(Notes 6 and 7 Continued)

Boston Metropolitan District (BMD) Bonds - These bonds were issued for transit purposes prior to the formation of the Massachusetts Bay Transportation Authority in 1964. For all issues except the Equipment Bonds, bond maturities in excess of the stated annual payments are refinanced and have been classified as long-term debt.

Description	Year of Maturity	Approximate Annual Payments	Average Interest Rate	Bonds Outstanding December 31	
				1983	1982
Boston Elevated Railway Company and Metropolitan Transit Authority Debt	2020	\$1,000	6.02%	\$ 36,918	\$ 37,918
Purchase of City of Boston Transit Properties	2024	\$ 536	4.98%	\$ 21,987	\$ 22,518
Equipment Serial Bonds	1987	\$ 128	2.90%	\$ 510	\$ 617
	1988	131	2.90	655	718
	1993	169	3.00	1,690	1,818
	1993	100	3.20	1,000	1,118
				<u>\$ 3,855</u>	<u>\$ 4,353</u>
Construction Bonds	1983	\$ -	2.75%	\$ -	\$ 2,118
	1988	55	3.00	2,750	2,818
	1989	70	3.60	3,553	3,618
	1990	19	3.50	988	1,018
	1992	50	8.60	460	418
	1993	40	3.20	2,200	2,218
	2002	575	9.26	10,925	9,218
				<u>\$ 20,876</u>	<u>\$ 21,518</u>
Total BMD Bonds Payable				<u>\$ 83,636</u>	<u>\$ 86,318</u>
Total Bonds Payable				\$619,593	\$538,318
Less: Current Maturities of Bonds Payable				21,748	19,718
Total Bonds Payable — Long-term				<u>\$597,845</u>	<u>\$518,600</u>

The accompanying notes are an integral part
of these financial statements.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
NOTES TO FINANCIAL STATEMENTS
DECEMBER 31, 1983 AND 1982

(1) SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

(a) Unreimbursed Cost of Service

The legislative act under which the Massachusetts Bay Transportation Authority (the "Authority") was established provides, among other things, that the Commonwealth of Massachusetts (the "Commonwealth") shall reimburse the Authority for its Net Cost of Service, as defined. This amount, to the extent it exceeds contract assistance (see Note 3), is then assessed by the Commonwealth to the cities and towns in the Greater Boston Metropolitan Area constituting the Authority.

The Cost of Service in Excess of Revenue presented on the Statement of Revenue and Cost of Service differs from the Net Cost of Service because the Authority follows generally accepted accounting principles for financial reporting purposes. The following table reconciles the Authority's Cost of Service in Excess of Revenue to its Net Cost of Service for the years ended December 31, 1983 and 1982:

	(\$000 Omitted)	
	1983	1982
Cost of Service in Excess of Revenue	<u>\$311,188</u>	<u>\$281,181</u>
Expenses not accessible -		
Depreciation and amortization in		
excess of bond principal payments	\$ 18,260	\$ 21,781
Loss on equipment removed from		
service	2,496	2,456
Extraordinary loss on advance		
refunding of debt	16,028	-
Interest on federal loans, net of		
related property income	244	2,378
Interest expense on debt paid through		
refunding issue	3,300	-
Reimbursements for -		
Contracted passenger service outside		
the Authority's area	1,274	923
State fuel taxes	485	489
Federal operating assistance	<u>21,338</u>	<u>23,200</u>
	<u>\$ 63,425</u>	<u>\$ 51,227</u>
Net Cost of Service	<u>\$247,763</u>	<u>\$229,954</u>

(b) Change in Year End

Since 1971, the Authority has operated and its Net Cost of Service has been assessed by the Commonwealth on a calendar year basis. Legislation enacted in 1980, however, stipulated that, as of July 1, 1983, the Authority's fiscal year be changed from the calendar year to a July 1 — June 30 fiscal year to coincide with the fiscal year of the Commonwealth and its cities and towns. Under other provisions of its enabling legislation, the Authority will continue to report its Net Cost of Service to the Commonwealth on a calendar year basis for reimbursement and assessment purposes.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
NOTES TO FINANCIAL STATEMENTS
DECEMBER 31, 1983 AND 1982

(Continued)

(c) Transportation Property

Transportation property is stated at historical cost. These costs include Authority labor costs for employees working on capital projects plus related fringe benefits, and an allocated share of general and administrative costs.

(d) Depreciation

Depreciation is provided in the accounts based on the straight-line method at rates which are designed to amortize the original cost of the property over its estimated useful life. The major categories of transportation property in service and the depreciation rates used in 1983 are:

	Low	Rates High	Average	Cost (\$000 Omitted)	
				1983	1982
Ways and structures	1.23%	10.0%	2.11%	\$ 863,471	\$ 711,696
Equipment	2.0	20.0	4.99	431,812	472,697
Land	-	-	-	82,174	83,499
				<u>\$1,377,457</u>	<u>\$1,267,892</u>

(e) Deferred Charges

Certain costs incurred by the Authority, primarily related to the expansion and modernization of its transportation system, have been deferred. These costs are amortized by charges to cost of service over the future periods in which the benefit to the Authority is estimated to be realized.

(f) Casualty and Liability Costs

The Authority is a self-insurer on claims for injuries and damages to the extent of \$1,000,000 per accident (\$500,000 for non-rail accident). Insurance coverage is carried on claims in excess of that amount up to a maximum limit of \$75,000,000.

The Authority accounts for injuries and damages by charges to operating expense as payments are made. In addition, the Authority has a funded accrual for public liability amounting to \$1,615,000 at December 31, 1983 and \$1,093,000 at December 31, 1982. In the opinion of the Authority's General Counsel, the ultimate settlement of various cases in process at December 31, 1983 will not have a material impact upon the Authority's financial statements.

(g) Workmen's Compensation Expense

The Authority is a self-insurer on claims for workmen's compensation to the extent of \$200,000 per occurrence. Insurance coverage is carried on each occurrence in excess of that amount. The Authority accounts for these claims by charges to operating expenses as payments are made.

(h) Vacation

The Authority recognizes vacation expense by charges to operating expense in the year that vacation is taken. Unpaid vested vacation pay as of year end amounted to approximately \$10,500,000 in 1983 and \$9,500,000 in 1982.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
NOTES TO FINANCIAL STATEMENTS
DECEMBER 31, 1983 AND 1982

(Continued)

(i) Grants

The Authority receives capital grants from certain governmental agencies to be used for various purposes connected with the planning, modernization and expansion of transportation facilities and equipment. Amortization of these grants begins when the related facilities and equipment are put into service. The grants are then amortized over the shorter of the estimated useful life of the assets or forty years. The amortization is reflected as a reduction of unreimbursed cost of service.

The Authority also receives grants to fund its operating deficits from the Commonwealth and the federal government (see Notes 3 and 4).

(2) LABOR MATTERS

In December, 1980, legislation was passed (Chapter 581) which, among other things, provided that the Authority not enter into collective bargaining agreements which jeopardize matters of inherent management rights and prohibited the Authority from entering into agreements which provide for pension benefits to its employees determined in a manner that includes overtime earnings or which provide for automatic cost-of-living salary adjustments.

In accordance with the 1980 legislation, the Authority had not granted cost-of-living adjustments in 1981 and has removed overtime earnings from the determination of pension benefits. During 1982, the Authority and Local 589, a union representing approximately 55% of the Authority's union employees, commenced arbitration of terms for extension of their contract which expired in 1980. The arbitrator, in his decision rendered on January 15, 1983, dealt with a number of issues including an award of a pay increase retroactive to January 1, 1982. The Authority has taken steps to implement certain provisions of the award, including the pay increases. Following the arbitrator's award several other bargaining units have entered into agreements. For the most part, these agreements follow the Local 589 award.

An accrual of \$1.8 million was made in 1982 for a portion of the cost of retroactive pay or benefit increases which may ultimately have been negotiated with those unions. This amount was included in the determination of the Net Cost of Service and in accounts receivable from the Commonwealth in 1982.

Subsequent to the issuance of the prior year's financial statements, it was decided not to include these wages in the Net Cost of Service for purposes of reimbursement from the Commonwealth due to the unavailability of funds to reimburse this amount. In 1983, an accrual for these retroactive wages was made and the Authority has included this expense in the Net Cost of Service for calendar year 1983.

Several pending lawsuits have been filed by unions representing Authority employees (1) challenging state legislation affecting the Authority's labor-management practices, (2) challenging actions taken by the Authority with respect to assignment of employees, use of part-time employees and refusal to pay so-called cost-of-living adjustments under expired collective bargaining agreements, and (3) seeking, in the alternative, enforcement of the arbitrator's award in its entirety or remand for redetermination of the award in its entirety. While the Authority to this date has been generally successful in defending these cases, the final outcome of the issues cannot be predicted. In the opinion of the Authority's General Council, a final resolution of the issues presented in certain state court cases which is favorable to the unions' position against the validity of the challenged actions would make it more difficult for the Authority to operate within its budget.

**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
NOTES TO FINANCIAL STATEMENTS
DECEMBER 31, 1983 AND 1982**

(Continued)

(3) CONTRACT ASSISTANCE FROM THE COMMONWEALTH

The Authority is reimbursed for its Net Cost of Service by the Commonwealth. A portion of this reimbursement is provided specifically in the form of contract assistance for debt service. The Commonwealth assesses a portion of the Net Cost of Service, after reducing it by the reimbursement for debt service, to the cities and towns constituting the Authority, up to the legislated limit. Contract assistance for 1983 and 1982 is summarized as follows:

(a) Debt Service

The legislative act authorizing the Authority to issue debt securities provides for contract assistance for the payment of annual debt service costs on bonds issued by the Authority as follows: on the bonds issued prior to January 1, 1971, the debt service is eligible for contract assistance at either 50% or 90%, as provided by contract; on bonds and bond anticipation notes issued after January 1, 1971, 90% of the debt service is eligible for contract assistance. However, regardless of when issued, contract assistance, under the current statute, will not be available on the debt service of more than \$735,300,000 of bonds outstanding at any one time. Additionally, the Commonwealth pays a maximum of \$3,000,000 annually for the debt service relating to BMD debt. The Authority was eligible for contract assistance of \$48,777,000 in 1983 and \$40,661,000 in 1982 relating to debt service.

(b) Operating Assistance

The Authority's Net Cost of Service reimbursable by the Commonwealth, after deducting the debt service and commuter rail operations contract assistance is \$192,944,000 for 1983 and \$183,289,000 for 1982. The amount to be assessed by the Commonwealth for the calendar year 1983 to the cities and towns comprising the Authority is limited to \$99,809,375, which is 102-1/2 percent of the amount assessed (including state borrowing charges) in 1982.

Contract assistance for commuter rail service outside the Authority's district is provided by statute each year. Contract assistance for commuter rail service amounted to \$6,042,000 in 1983 and \$6,004,000 in 1982. (See Note 5)

(4) FEDERAL OPERATING ASSISTANCE

Section 5 of the Urban Mass Transportation Act of 1964 (the 1964 Act), as amended, provides federal operating assistance through the 1983 federal fiscal year on the basis of a statutory formula. The Authority received \$5,160,000 of assistance remaining from Section 5 in calendar year 1983.

The Surface Transportation Act of 1982 (the Surface Act) amended the 1964 Act by replacing Section 5 assistance with a new Section 9 under which both capital and operating grants will be made. The Authority is eligible to receive \$21,383,000 of Section 9 operating assistance for calendar year 1983.

(5) RAILROAD COMMUTER SUBSIDIES

Under Chapter 161A Section 3(f) of the General Laws, the Authority may enter into agreements with private transportation companies, railroads and other concerns providing for joint or cooperative operation of any mass transportation facility and for operation and use of any mass transportation facility and equipment for the account of the Authority.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
NOTES TO FINANCIAL STATEMENTS
DECEMBER 31, 1983 AND 1982

(Continued)

On February 23, 1982, the Authority entered into a new five-year operating agreement with the Boston and Maine Corporation, Debtor (B & M), to provide commuter railroad service over the Authority's rail lines. The Authority has agreed to pay the B & M for direct and indirect service expenses, a management fee and ridership and performance incentives that may be reduced in case of noncompliance. In the event that the Advisory Board fails to approve the annual budgetary provision for any of this service, the agreement shall terminate subject to certain labor protection obligations.

The costs and related operating assistance of commuter rail service, excluding depreciation, are summarized below:

	(\$000 Omitted)	
	1983	1982
Passenger revenues	\$16,842	\$15,300
Operating costs, excluding depreciation of Authority-owned property devoted to commuter rail service	<u>60,068</u>	<u>60,904</u>
Railroad commuter expense reflected in statement of revenue and cost of service	\$43,226	\$45,604
Less: Operating assistance from state and local sources -		
State contract assistance	6,042	6,004
Reimbursement from entities outside the Authority's area	<u>1,274</u>	<u>923</u>
	<u>\$35,910</u>	<u>\$38,677</u>

(6) NOTES PAYABLE AND LONG-TERM DEBT

The following notes payable were outstanding as of December 31, 1983 and 1982:

1983			1982		
		(\$000 Omitted)			(\$000 Omitted)
Due Date	Interest Rate	Principal Amount	Due Date	Interest Rate	Principal Amount
Mar. 23, 1984	5.60%	\$ 50,000	Mar. 11, 1983	9.25%	\$100,000
Mar. 23, 1984	5.50	75,000	Mar. 11, 1983	9.30	25,000
Oct. 1, 1984	6.40	25,000	July 7, 1983	9.65	<u>70,000</u>
Oct. 1, 1984	6.18	<u>45,000</u>			
		<u>\$195,000</u>			<u>\$195,000</u>

Notes payable of \$125 million due March 23, 1984 were refinanced at an interest rate of 6.60% due March 22, 1985 and \$50 million of additional notes payable due June 21, 1984 were issued to finance current expenses.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

NOTES TO FINANCIAL STATEMENTS

DECEMBER 31, 1983 AND 1982

(Continued)

Annual maturities of long-term debt as of December 31, 1983 were \$21,748,000 in 1984, \$22,052,000 in 1985, \$22,208,000 in 1986, \$22,082,000 in 1987, and \$22,165,000 in 1988.

The legislative act under which the Authority was established provides that if at any time any principal or interest is due on any bond or note issued or assumed by the Authority and funds to pay the same are not available, the Commonwealth shall thereupon remit to the Authority the amount required to meet such obligations.

On August 18, 1983, the Authority issued \$71,210,000 of refunding bonds in order to advance refund \$24,750,000 of 14.2% 1981 General Transportation System Bonds and \$28,600,000 of 13.2% 1982 General Transportation System Bonds (the Refunded Bonds). The proceeds from the refunding after expenses were deposited with a trustee who used the proceeds to purchase direct obligations of federal, state and local governments, thereby defeasing the Refunding Bonds. The government obligations will mature at such time and yield interest in such amounts so that sufficient monies will be available therefrom to pay principal and interest on the refunded debt as it matures. The refunding resulted in a loss of \$16,000,000 which has been recognized as of the date of the refunding and will be offset in future years through reduced interest payments. The loss did not affect the Net Cost of Service because bond principal payments and related interest are assessed only when paid by the Authority. The loss has been charged to the unreimbursed cost of service account and will be offset through reduced debt service over the term of the new bonds.

(7) PLANT AND EQUIPMENT IMPROVEMENT PROGRAM

The Authority's continuing program for mass transportation development has projects in service and in various stages of approval, planning, and implementation with a total estimated cost of \$3.93 billion. As of December 31, 1983, projects with an estimated cost of \$3.16 billion have been approved with \$2.30 billion to be provided from federal grants, \$130 million from state and local sources, and \$730 million from Authority bonds. As of December 31, 1983, the Authority has expended \$2.2 billion on this program which has been financed through the receipt of \$1.6 billion of federal grants, \$609 million of the Authority's General Transportation System Bonds, and \$52 million from other state and local sources.

Funding for remaining estimated project costs of \$768 million is expected to be provided by \$608 million from federal and other sources and \$160 million from bond proceeds. Currently, the authorized debt ceiling for MBTA bonds is \$867.3 million. Of this amount, \$478.3 million may be issued only once, and any bonds maturing or redeemed on or after January 1, 1986 may not be reissued, thereby reducing the amount of bonds which may be outstanding at any one time. As of December 31, 1983, debt requirements for the entire program are within currently authorized limits.

The terms of the federal grant contracts require the Authority to utilize the equipment and facilities for the purpose specified in the grant agreement, maintain these items in operation for a specified time period which normally approximates the useful life of the equipment and comply with the equal employment opportunity and affirmative action programs as required by the Urban Mass Transportation Act of 1964, as amended. Failure to comply with these terms may jeopardize future funding and require the Authority to refund a portion of these grants to the Federal Department of Transportation. In management's opinion, no events have occurred that would result in the termination of these grants or require the refund of a significant portion of funds received under these grants.

As of December 31, 1983, the Authority had outstanding commitments related to the improvement program amounting to approximately \$278 million.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
NOTES TO FINANCIAL STATEMENTS
DECEMBER 31, 1983 AND 1982

(Continued)

(8) SETTLEMENT FUNDS

As part of the Authority's program for mass transportation improvement, the Authority entered into a grant contract with the Urban Mass Transportation Administration (UMTA) providing for the purchase of 175 light rail vehicles, spare components, and various engineering support at an estimated project cost of \$68,305,000, \$48,084,000 to be provided by an UMTA grant. In 1972, the Authority entered into a contract with a manufacturer for the purchase of these vehicles, components and related engineering support. The 135 vehicles delivered pursuant to this contract were plagued by a variety of operating and maintenance problems which led to a series of disputes between the manufacturer and the Authority. In 1979, an agreement was reached with the manufacturer which released the manufacturer from all liability related to the vehicles in return for modification parts and a cash settlement.

The Urban Mass Transportation Administration has concurred with the agreement provided that the cash settlement and associated interest income will be used along with funds remaining from the original grant to provide 175 vehicles with equivalent capacity available for revenue service. Authority management intends to utilize the funds to modify existing vehicles and procure additional vehicles to meet this provision.

At December 31, 1983, the amount shown as settlement funds reflects the settlement proceeds from the manufacturer plus interest realized on the proceeds since the date of the settlement less expenditures made for eligible project costs.

(9) LOANS PAYABLE TO FEDERAL DEPARTMENT OF TRANSPORTATION

In 1973, the Authority purchased 145 miles of right-of-way and related properties in Eastern Massachusetts from the Penn Central Railroad. This purchase was financed with a \$19.5 million (6.875% interest rate) loan from the Federal Department of Transportation.

In 1976, the Authority purchased certain assets of the B & M, including right-of-way, revenue equipment, track and related properties. The cost of \$39.5 million was financed with a \$24,173,000 (8% interest rate) loan from the Federal Department of Transportation secured by the assets purchased, a \$12,262,000 Federal Department of Transportation grant and \$3,065,000 of local funds.

Of the property purchased, right-of-way and yards of \$13,574,100 are not presently in transit use by the Authority and are being held for future expansion. The properties acquired are pledged as security for the loans.

In January, 1983, 80% (\$46,190,000) of the outstanding principal and interest of these loans was forgiven by the federal government pursuant to the Surface Act. The remaining 20% of the outstanding principal and interest is to be forgiven under the Surface Act contingent upon the Authority committing an additional \$16,734,000 to public transportation projects. The amount which the Authority must expend increases by approximately \$35,000 for each month in which the funds are not committed for these projects. The amount of principal and interest forgiven has been reflected as a federal grant as of December 31, 1983.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

NOTES TO FINANCIAL STATEMENTS

DECEMBER 31, 1983 AND 1982

(Continued)

(10) RETIREMENT PLANS

The Authority provides pension benefits to employees through a contributory defined-benefit retirement plan. The plan currently requires the payment by the Authority of an amount equal to approximately 12% of the total payroll of the members of the plan. The amount of employee and Authority contributions to the plan is intended to fund normal cost, interest on the unfunded liability and administrative expenses. The Authority is not legally obligated to fund the unfunded actuarial liability which approximated \$155,621,000 as of December 31, 1982 and \$174,926,000 as of December 31, 1981, the dates of the latest actuarial valuations.

The Authority has recently negotiated a new pension agreement covering the period July 1, 1982 through June 30, 1985. This pension agreement applies to all employees who are or become members of the MBTA Retirement Fund without regard to union affiliation. This agreement provides for post retirement adjustments for retirees, as well as a modest improvement in the pension benefit formula. Part-time employees at the Authority, commencing December, 1983, will also be covered by the MBTA Retirement Fund. The impact of the new agreement on pension expense or the current contribution rates is undeterminable as of December 31, 1983.

Annual pension expense for the plan is computed based on a projected benefit method using a compounded annual interest rate of seven percent and a salary increase factor of five and one-half percent. The cost of the plan to the Authority was approximately \$18,416,000 for 1983 and \$17,787,000 for 1982. The accumulated plan benefits and plan net assets, determined as of December 31, 1982 and 1981, are as follows:

	1982	1981
Actuarial present value of accumulated plan benefits:		
Vested	\$374,007,000	\$350,158,000
Nonvested	3,235,000	6,095,000
	<u>\$377,242,000</u>	<u>\$356,253,000</u>
Net assets available for benefits	<u>\$336,290,000</u>	<u>\$260,582,000</u>

The Authority has also entered into agreements with certain salaried employees to provide supplemental pension benefits after retirement. Employees must have at least ten years of service and be eligible under the provisions of the contributory retirement plan to receive these benefits. At December 31, 1983, approximately 700 employees were either receiving supplemental benefits or will be eligible to receive them upon retirement. Expense under this plan is computed based upon an entry age actuarial cost method, forty year amortization of unfunded actuarial liability, an annual interest rate assumption of nine percent and a salary increase factor of seven percent compounded annually. The increase in benefits under the Authority's contributory defined-benefit plan during 1983 reduced prospective benefits under the deferred compensation plan. The effect of these changes on the results of operations is undeterminable at December 31, 1983. The Authority's practice, under this plan, is to provide a reserve for pension costs as they accrue.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
NOTES TO FINANCIAL STATEMENTS
DECEMBER 31, 1983 AND 1982

(Continued)

Supplemental benefits expense was \$1,107,000 for 1983 and \$1,062,000 for 1982. The accumulated plan benefits and plan reserve as of January 1, 1983 and 1982, the dates of the latest actuarial valuations, are as follows:

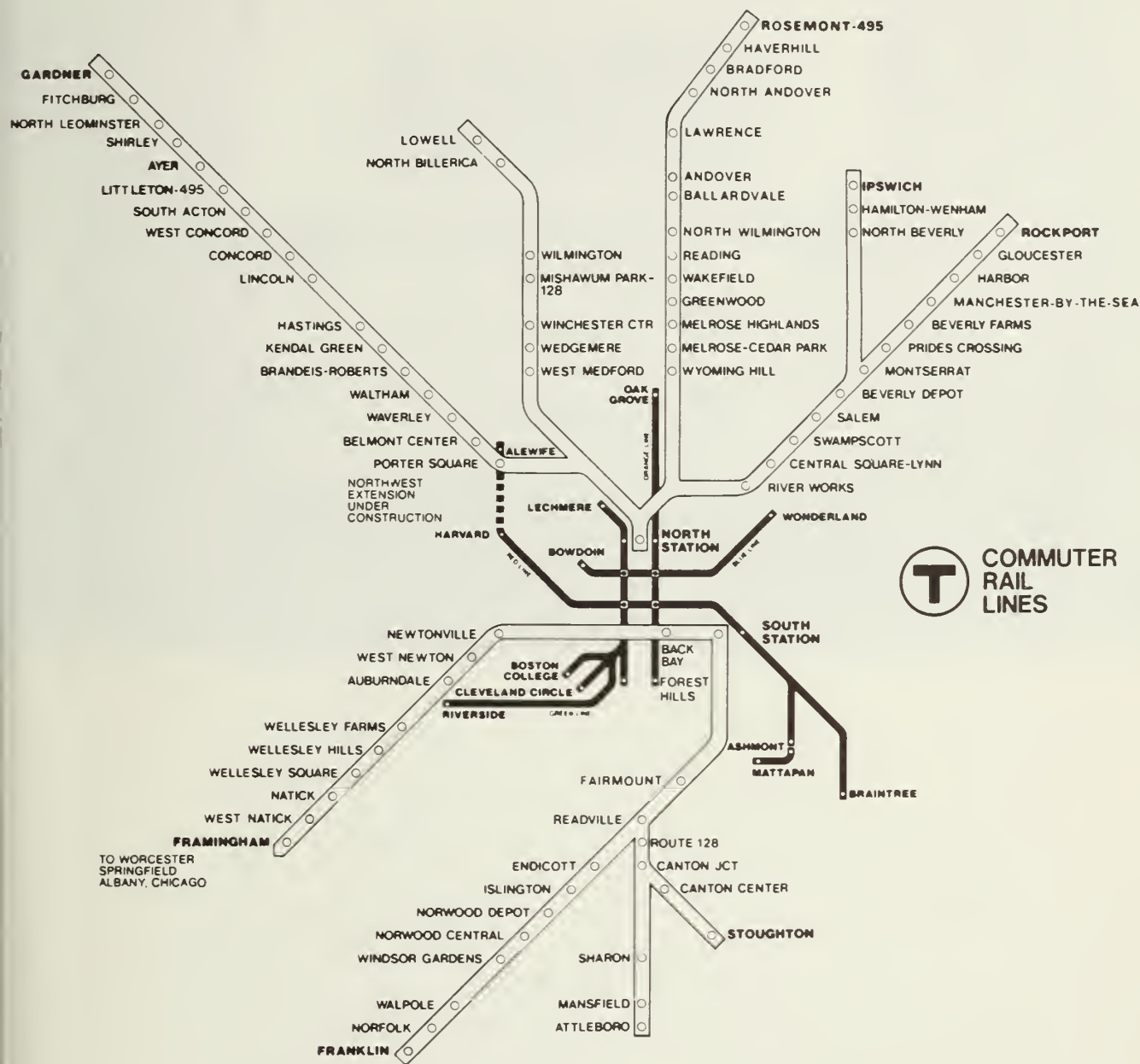
	1983	1982
Actuarial present value of accumulated plan benefits:		
Vested	\$6,975,000	\$6,684,000
Nonvested	2,092,000	1,852,000
	<u>\$9,067,000</u>	<u>\$8,536,000</u>
Reserve available for benefits	<u>\$2,116,000</u>	<u>\$1,907,000</u>

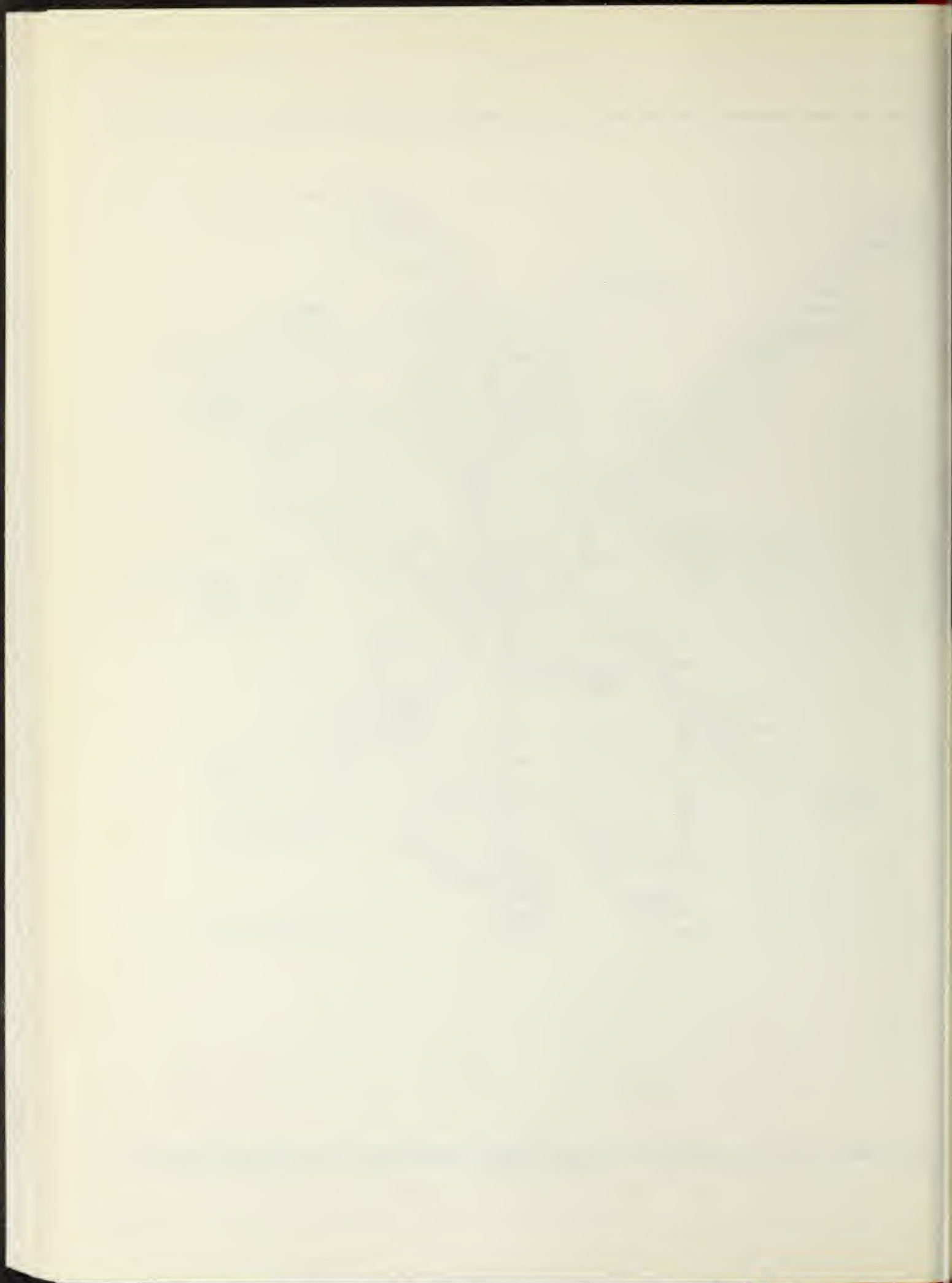
Additionally, the Authority is obligated to pay pension and medical benefits to retired employees not eligible for membership to the retirement plan and life and medical insurance costs of retired employees. The expense to provide these benefits was \$7,664,000 in 1983 and \$6,450,000 in 1982.

(11) PROVISION FOR EQUIPMENT REMOVED FROM SERVICE

In 1981, the Board of Directors announced its decision to discontinue steam generation operations at its South Boston Power Station, dismantle the steam-powered boiler generators and sell them. In 1981, a provision was made to operations for the cost of the steam generating boilers and their installation, net of an estimate of the proceeds to be received upon their sale. In 1982, an additional provision was made to reflect additional costs of the shutdown. In 1983, a provision was made for the net book value of buses which will no longer be used for revenue service.

The cost of the buses and the boilers was 80% funded by the federal government. The Authority intends to use construction funds to the extent, if any, the government requires repayment of those funds.







Back Cover Photo: Passing Tower "F" south of Dudley Street
Station on the Orange Line.

Photo by William A. Pollman

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